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VOL. 122 NO. 18 MAY 2, 1946

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OPA Simplifies Relief Adjustment Procedure
Ontario Superior Mills Nearing Production
New Woodpulp Ceiling Squeezes Holyoke
Paper Mill Unions to Seek Higher Scale

CPA Head Sees Newsprint Control Needed
Casein Ceiling Lifted to Relieve Shortage
Restigouche Improvement Set for Spring
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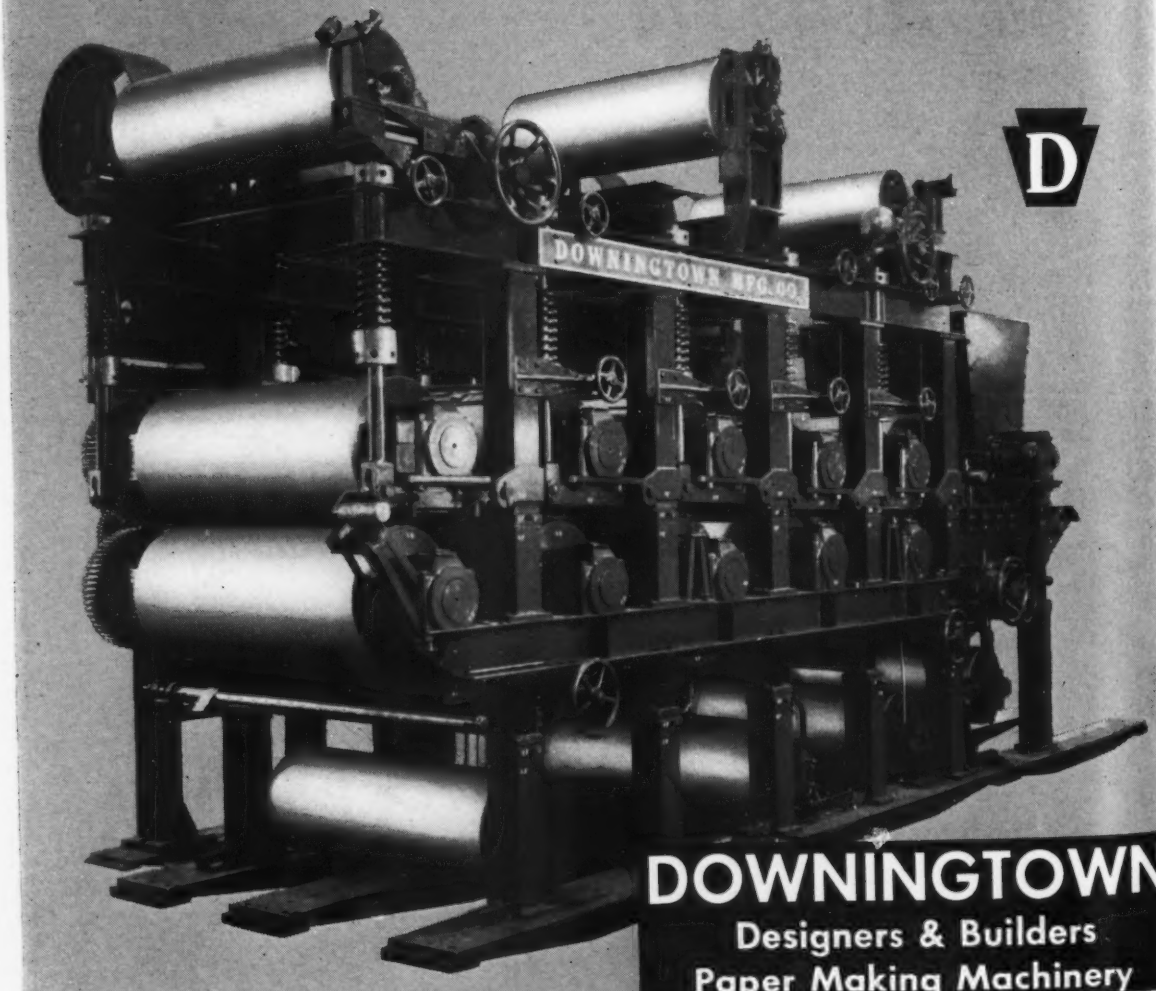

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PAPER TRADE JOURNAL

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Established 1872

Volume 122 Number 18

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PAPER TRADE JOURNAL

Vol. 122, No. 18 May 2, 1946

Title Reg. U. S. Pat. Off.

New Woodpulp Price Squeezes Holyoke

HOLYOKE, Mass. — The increase in wood pulp prices that the OPA has granted will be a crusher to the Holyoke paper mills unless OPA follows it with a price lift for finished paper products. Local paper mill manufacturers are unanimous in their sentiment that the mills can't take another operational cost squeeze without price relief. While newsprint and kraft paper have been given OPA price relief the wood pulp and rag content papers made in Holyoke have had to absorb all of the recent labor and raw material cost rises.

They are about at the end of the absorption rope and unless OPA grants price increases in their lines the local mills will be in trouble, the officials say.

The increase in OPA wood pulp prices is expected to bring an additional 19 million dollars a year to the industry and is designed to stimulate production. The adjustments will range from $3 to $9 a ton on standard grades comprising 80 per cent of the market wood pulp and from $4 to $12.50 on special grades representing 3 per cent of the market woodpulp.

Paine and Dana Succeed Clough at N. Y. and Penn.

Clarence A. Clough has retired as secretary and general sales manager of the New York and Pennsylvania and Castanea Paper Companies. He entered the employ of the company in 1900, has contributed materially to the growth and success of the business in the nearly half-century of his connection there. A. G. Paine, II, was elected secretary of the companies to succeed Mr. Clough. Marshal M. H. Dana had been appointed Sales Manager of the Specialty Division of the New York & Pennsylvania Company.

Marathon County Approves Dancy Reservoir Project

WAUSAU, Wis. — The Marathon County Board of Supervisors took favorable action Monday, April 22, on the request of the Consolidated Water Power and Paper Company, Wisconsin Rapids, for the vacating of several county trunk highways for the proposed Dancy reservoir of the Wisconsin Valley Improvement Company in the Little Eau Pleine river basin. The board adopted a resolution proposed by a special joint committee. This stipulated that the construction of a new bridge on County Trunk M be financed entirely by Consolidated; that one new highway be constructed across the flowage, another relocated and that the county be assured that all reasonable claims for damage in the affected area have been satisfactorily settled.

The Wood and Portage county supervisors are still to act concerning other highways in the area.

Ontario-Superior District Mills Rapidly Nearing Production

TORONTO—Progress reports are being received from the many development projects under way along the north shore of Lake Superior, where pulp and paper interests are investing upwards of $50,000,000 in new plant facilities. Most of this development is taking place within a stretch of 200 miles, beginning at Marathon, or Peninsula, as it was called before Marathon Paper Mills of Canada began its great project, and running westward. From Sault Ste. Marie the rugged, winding Lake Superior Shore stretches northwestward for 184 miles, until it reaches the Pic River, approximately at Marathon, before turning definitely westward. From Schreiber the shore line continues slightly northwestward again until it reaches the Nipigon River, down which some $20,000,000 worth of timber will come this spring, to be rafted along Eastward to the various mills between Schreiber and Marathon.

At Peninsula Bay the great Marathon mill, before many months, will be turning out bleached kraft pulp. The community already boasts a population of 1,500, at a spot hitherto known only as a prisoner-of-war camp. Two hundred houses are under construction and a large well-appointed hotel, steam-heated apartments, a bank, stores and shops, make up a business section. A modern public school already has 20 pupils and a three-story hospital is expected to be ready by July. Company officials expect the town to house 2,000 to 2,500 people in 275 modern single-family houses, duplexes and apartments by next Christmas.

A single-track railway, the Sudbury-Port Arthur branch of the Canadian Pacific Railway, connects the towns between Marathon and Schreiber and at present there is no other way of reaching this district by land. The 48-mile unfinished stretch of the Trans-Canada Highway, between Marathon and Schreiber could be completed in three months and it is hoped the Ontario department of highways will get the work under way this summer.

Brompton Pulp and Paper Co. at Red Rock, has just got into production. The village has a population of 1,000 and has a $150,000 hotel and other well-equipped buildings. An ultra-

(Continued on page 12)

Mando Elects Hull to be Assistant Secretary

MINNEAPOLIS—At a meeting of the board of directors of Minnesota and Ontario Paper Company on April 22, Hadlai Hull was elected assistant secretary of the Company. Mr. Hull is a native of New London, Conn., and attended Choate School, and later Yale, where he was graduated from the law school in 1939.

Mr. Hull practiced law in New York City and was connected with the firm of Sullivan and Cromwell until entering the navy in 1941. He served in the Atlantic, Mediterranean and Pacific theatres.

HADLAI HULL
Elected M & D Assistant Secretary

OPA Simplifies Procedure For Relief Adjustments

WASHINGTON, D. C.—Uniform provisions have been established for individual adjustments of manufacturers' ceiling prices in the pulp and paper industry by the Office of Price Administration. This action, which became effective April 29, 1946, is designed to (1) simplify procedure for both applicant and OPA, saving time in both instances; (2) enable some additional manufacturers to apply for adjustments; (3) permit adjustments to maintain production of low-end items in some branches of the industry where this has not been possible before; (4) provide uniform conditions under which applications can be made as well as in the amount of relief that can be granted; and (5) provide for a uniform pass-on basis for any resellers unable to absorb an individual price adjustment granted a manufacturer.

Individual adjustment provisions heretofore in effect in pulp and paper regulations are superseded by the new procedure, although ceilings established by the former provisions remain unchanged.

Suppliers of pulpwood, paper merchants, and dealers in waste materials used in paper making are not covered by the new provisions, which apply only to manufacturers. Provision is made, however, for pass-ons by wholesalers where it is shown they cannot absorb an adjustment granted a manufacturer.

OPA said that in general relief would be granted to lift current overall earnings where the applicant's current overall earnings rate is less than in the 1936-39 base period. Relief for a given product also may be given where the company's overall earnings are above base period levels but on that particular product the company is losing money.

Adjustments will be limited to cases where the manufacturer's production is required to meet essential civilian needs or where discontinuance of the production will force customers to use higher priced substitutes. The adjustments are further limited to cases where the product constitutes a substantial portion of the seller's total sales or of the total national output of the commodity.

Blank Book Raises Pay Scales

HOLYOKE, Mass.—A general increase of 10c an hour has been granted to employes of the National Blank Book Company, effective May 1. The raise was announced in a joint statement by the company and local 48, International Brotherhood of Bookbinders, AFL. The increase is in addition to a 7½ cents an hour general wage increase granted December 1, 1945.

New England Is Concerned About Government Plans

HOLYOKE, Mass. — Holyoke paper manufacturers are concerned over reports emanating from Washington that the federal government is considering going into the paper manufacturing business. The government would buy a plant or plants, as the story goes, already in existence and run them. This would assure the government of a steady supply of paper.

The government is finding it difficult to get bids on the tonnage required. Many Holyoke paper mills are government suppliers but can not provide Washington with all the paper it demands and, at the same time, furnish the civilian market with its requirements.

During the war the government had first call on its paper orders. Now, however, it has to vie with private business for the supplies from the hard-pressed mills.

Casein Ceiling Lifted To Relieve Shortage

WASHINGTON, D. C. — Increases of nine cents a pound in maximum prices for inedible, industrial casein, a skim milk by-product, were authorized last week by the Office of Price Administration. This action, it was explained, was taken to encourage production of casein to meet requirements estimated at fifty to seventy-five million pounds a year.

Casein producers here claimed that the previous ceiling of 24 cents a pound did not allow the profitable returns they got from production of skim milk powder, urgently needed during the war to feed the armed forces, and now in demand to meet relief requirements. OPA pointed out that the new price differential between casein and skim milk powder is still wide enough to assure a sufficient supply of powder. Diversion of skim milk to casein production would not be as profitable under the new ceilings as continued production of skim milk powder is to the manufacturers producing that product, OPA said.

Industrial users of casein, unable to meet their own requirements with the supply being produced, were forced to buy from foreign markets, where prices have shot up from 9½ cents a pound to 34 cents a pound since last summer.

The new ceilings raise the base price for acid casein in lots of 10,000 pounds or more, to 33 cents a pound.

CPA Increases Quota For Rosin Exports

WASHINGTON, D. C. — The Civilian Production Administration has announced quotas which will permit the licensing for export of 100,000 drums of gum and wood rosin during the three-month period ending June 30 and 150,000 drums from July through September. These quotas represent the amounts by which United States production is expected to exceed domestic consumption, CPA officials said. Quotas have not yet been set for the third and fourth quarters of the naval stores crop year.

Civilian Production Administration spokesmen said that although they had hoped for an increase in rosin production during the naval stores crop year ended March 31, actual production was approximately what it had been the previous year—1,318,000 drums.

Pointing to increased need for rosin in the paper, paint, linoleum, wallboard, plywood and other housing and reconversion industries, CPA officials said the supply situation made continuation of export limitations necessary. Before the war the United States exported about half of its rosin production.

Northeastern Wood Council to Discuss Hardwood Pulping

NEW HAVEN, Conn.—The Northeastern Wood Utilization Council has made a preliminary announcement of its forthcoming meeting on October 2, 1946, with the cooperation of the New York State College of Forestry in which the subject of hardwood pulping will be discussed. The meeting will be held in Syracuse, New York, and will hear papers on the latest developments both here and abroad on the pulping of hardwood, the economies of pulpwood production, and the utilization of by-products.

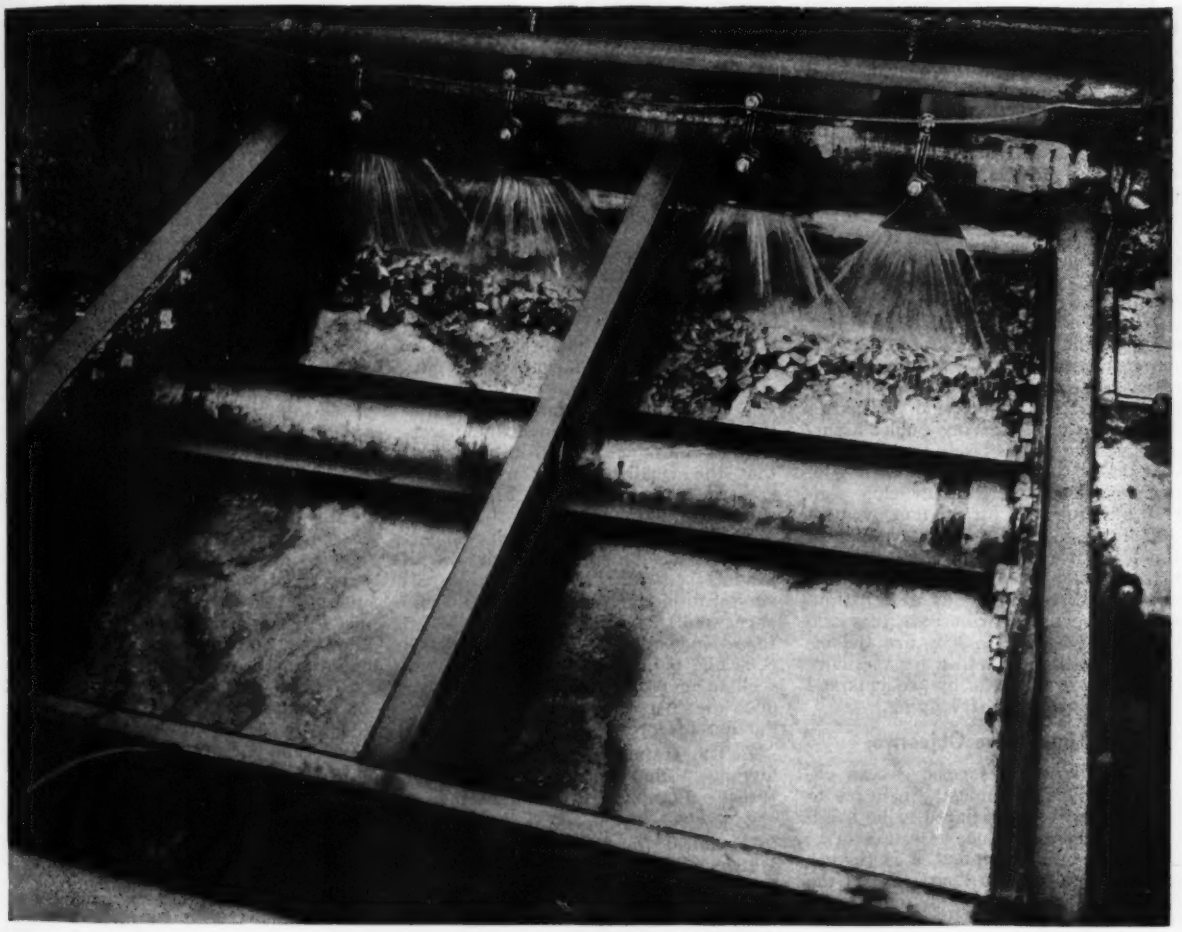
During the last decade hardwood pulping has been practiced increasingly by a number of mills and was accelerated on account of the war. This practice is expected to continue and increase further in view of the large demands for pulp and paper coupled with a shortage of softwoods.

Attendance of the meeting will be by invitation only and will be restricted to seventy-five, in order to insure a round table discussion. Further details may be obtained by addressing Mr. E. L. Heermanco, Secretary, Northeastern Wood Utilization Council, New Haven 6, Conn.

S. Walter Elects Lefkowith

PHILADELPHIA — Harry Lefkowith, who is well and popularly known in the paper trade, has been elected president of S. Walter, Incorporated, and associated with him will be T. F. Kennedy and B. R. Moore as vice presidents. V. L. Wilson will serve as secretary.

The KNOTS are NAKED When They Leave *This* KNOTTER



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One small (6′ square) Jonsson Screen handles as much as 100 tons a day—uses only 3 HP... This is the Screen for your knotting, and it's equally effective as a bull screen, coarse screen, fine screen and tailings screen. For recommendations and estimates write Bird Machine Company, South Walpole, Massachusetts.

The JONSSON SCREEN FOR PULP

Canada's Forest Industries Join To Urge Ten-Point Program

MONTREAL—A determined campaign to raise the question of forest conservation above the level of provincial and sectional interests, and to make it a truly national policy under the active overall direction of the Federal Government, appears to be developing as part of a settled objective of the forest industries, as expressed through their trade organizations and through the activities of the Canadian Forestry Association, the latter an influential organization on a nationwide basis.

The Newsprint Association of Canada recently gave public backing to the call for an overall federal policy, with specific proposals for the part the newsprint industry was prepared to play. Now the Canadian Pulp and Paper Association has carried the matter a step further by giving public assurance that it "stands ready to work with other forest industries and with government departments to develop policies and programs for the improvement of forests and for the maintenance of Canada's forest resources." It also makes public a ten-point program embracing recommendations for nationwide surveys of forest resources and safeguards against loss by fire and insect infestation, as well a for the more intensive use of forest by-products and the mechanization of logging.

An Imperative Objective

This program, described as "an objective which the industry believes to be imperative," is declared to be based on practical experience. The extent to which it could be applied, it is further stated, would depend "partially on the economic position of individual companies, the degree of government support that is given, and the levels of post-war trade that can be established for Canadian pulp and paper products."

The plan, it is revealed, was approved at the annual meeting of the Association on January 25 last and is now released to the public for the first time. The release coincides with the holding of the culminating sessions of the conference of Dominion and Provincial Governments, at which history-making decisions are being arrived at for the clear demarcation of the respective spheres of the federal and provincial authorities in matters of taxation and in respect to reconstruction policies as a whole in the light of the new problems of the reconstruction era.

In brief, the Association's recommendations are as follow:

1. There should be complete information through aerial photographs and surveys of all forest resources so that long-term planning will be possible. Cooperation is needed between forest operators and the survey branches of the Dominion and provincial forest services.

2. Each forest operator in the industry should examine the forest area serving each producing unit to determine its present and future ability to supply the needs of that unit in perpetuity. This will require determination of the present and future "working circle" of each unit, in such a way that such working circle can be made accessible for forest management.

3. The losses of wood supplies from fire, insect infestation and disease should be reduced through the coordinated efforts of the forest industries and the Dominion and provincial government departments.

4. Each forest operator should obtain and apply the knowledge necessary to reproduce and grow forests so that the yield per acre may be increased and the period of rotation shortened.

5. The maximum use and commercial disposal should be made of all products of the forests, both by diversification of production in pulp and paper mills and by disposal to allied forest industries.

6. The pulp and paper industry will seek to increase the efficiency and reduce the cost of logging by the introduction of mechanical equipment.

7. The training of men in efficient logging techniques and other basic forest operations will be intensified.

8. Each forest operator should seek to establish for its own operations a system of long-term tenure of forest lands which will permit proper execution of a long-term forest management policy and reasonable return on the investment therein.

9. Suitable arrangements with governments will be sought for financing projects for forest development and protection which a sound forest policy requires to be carried out by the industry.

10. The pulp and paper industry will seek to encourage efficient forest management on private lands and to develop pulpwood production on private lands to ensure a regular and sustained supply of improved quality.

Kimberly-Clark Uses Quonset Huts

NEENAH, Wis.—The Quonset hut project by Kimberly-Clark Corporation will be completed May 1. It includes six Quonsets, two of which are arranged as the cafeteria, and the other four, connected with passageways, to serve as dormitories, shower rooms and lounge rooms.

ONTARIO DISTRICT MILLS NEARING COMPLETION

(Continued from page 9)

modern $200,000 school is being planned.

On the Aquasabon River, about midway between Marathon and Red Rock, diamond drillers, builders and construction crews are starting on the $15,000,000 Kimberley-Clark Canadian pulp and paper enterprise. The stage is being set for the hundreds of engineers, skilled workers and laborers required for work on the mill and townsite. A large dam will be built above the river falls for handling logs from the northern reaches of the district streams. Harbor facilities for the mill will be set up on an inlet of Lake Superior. The town will bear the name of Terrace. The Ontario Hydro-Electric Power Commission is building a $5,000,000 power plant three miles away.

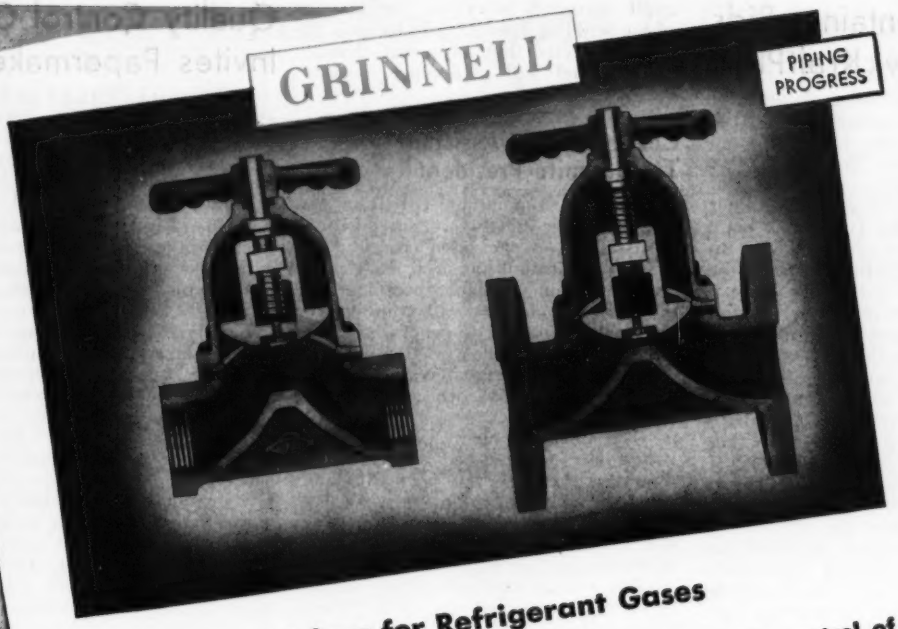
One does not usually think of the prairie provinces as forests products producers, yet Alberta, Saskatchewan and Manitoba last year produced forest products to the value of $20,000,000. This puts the prairie provinces up in the same bracket as forestweathy Ontario. Forest products added more new wealth to the province of Manitoba during 1945 than in any year since 1930. Total value of production was over $7.5 millions. It is just 15 years since the control of Manitoba's natural resources passed from federal to provincial hands. The forests which came into the province's charge at that time have been administered by the Manitoba department of mines and natural resources. Today Manitoba is richer in forest resources than at any time in the past 25 years. Policy of the department with regard to forest resources is based on the principle that resources should be used, but not despoiled or wasted. Protection and conservation are matters of prime importance. Export of pulpwood to mills outside the province is a growing business. More than 24,000 cords went to the United States in 1945. At the same time the amount of pulpwood delivered to the plant of the Manitoba Paper Co. at Pine Falls, the province's biggest mills, was considerably increased over 1944.

Price Bros. Refunding Program Calls Mortgage Bonds

MONTREAL — Price Brothers and Company's outstanding first mortgage bonds of 1957 totalling some $11,081,000, have been called for redemption on June 25 at 102¾ and accrued interest. A new issue has been sold of $9,835,000 new first mortgage bonds, of which $3,000,000 are 3¼ per cent serials due 1947 to 1952, and $6,835,000 are 20-year 3¼'s due 1966. The latter, it is understood, were offered at 101½. It is also announced that preferred stock of more than $6,000,000 will be redeemed and new stock for $5,000,000 only will be issued.

GRINNELL

PIPING PROGRESS



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Question: **Why is a diaphragm valve best suited for the control of Freon and other refrigerant gases?**

Answer: **The diaphragm seals against leakage of gas under pressure or in-leakage of air under high vacuum. Diaphragm must be impervious to destructive action of the gas.**

The above cross-sectional view of a Grinnell-Saunders Diaphragm Valve shows how the molded diaphragm of special rubber compound, unaffected by refrigerant gases, prevents the loss of gas under pressure or the in-leakage of air under high vacuum conditions.

WHENEVER PIPING IS INVOLVED

No single type of piping material is suitable for the wide variety of operating conditions encountered in modern process industries. The Grinnell-Saunders Diaphragm Valve typifies the extent to which this company goes to solve the piping requirements of hard-to-handle liquids and gases.

The development of such piping specialties calls for wide piping experience, continuous laboratory research and skilled field engineering – the kind of a background that Grinnell brings to the job from 95 years of piping experience. As specialists in piping, Grinnell can supply everything from a tiny tube fitting to a complete power or process piping installation.

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WHENEVER PIPING IS INVOLVED

National Container Bids For Tomahawk Kraft Plant

TOMAHAWK, Wis.—Negotiations for the sale of the Tomahawk Kraft Paper Company, to the National Container Company, New York City, were revealed Wednesday, April 24, at Wausau, Wis. National Container plans to convert the Tomahawk plant to the manufacture of corrugated shipping containers and allied lines. If the deal is consumated, it is said, National will switch from present paper grades to kraft paper board and will install equipment to double the mill's capacity, and build a converting plant for manufacturing corrugated containers.

The New York firm has offered to buy the outstanding stock at $21 per share, according to a brochure distributed among shareholders. Tomahawk stock has recently been selling between $14 and $15 per share.

To cover the purchase price of the 161,725 shares of capital stock outstanding, National has made available $3,396,225 to the Wisconsin Valley Trust Company, Wausau, which is acting as depository. A condition of the offer is that 75 per cent of outstanding stock of each class be tendered for payment by June 1, with options of accepting lesser amounts down to 66⅔ per cent of each class of stock and of extending the tendering date to June 15.

Present indications are that the larger shareholders favor the sale, since the premium would amount to nearly $7 per share. If sufficient stockholders offer their holdings and the deal goes through, stockholders will have until July 31 to sell their shares. After that date National is not obligated to buy the shares still outstanding. Capital stock outstanding includes 43,575 Class A shares, 23,790 Class B shares, and 94,360 Class C shares.

Tampax Takes Over Plant At Three Rivers, Mass.

PALMER, Mass.—A spokesman for Tampax, Incorporated, of Three Rivers said this week that the Three Rivers plant of the Cleveland Container Company has been taken over by Tampax. He said the equipment and personnel were taken over to enable Tampax to produce the large volume of tubing required in its own manufacturing process, which will eliminate manufacture of other items formerly made by the Cleveland Container company.

Cyril Ondre, plant manager of the Container company's local factory, will become an official of Tampax as soon as the transfer is completed and will be in charge of the new tubing division.

The Cleveland company has been located here since a short time prior to the war. It manufactured paper tubing, which it supplied to the Atlantic states. It also supplied millions of small diameter tubes to Tampax in whose building the plant is located. It is not expected that any great change in personnel will take place, it was stated.

Coates Named Assistant To Masonite President

CHICAGO—Appointment of John M. Coates to the newly created position of assistant to the president of Masonite Corporation has been made public by Eugene Holland, president of the company. Coates will continue to act in the capacity of general counsel for the organization

The recently designated presidential assistant has been associated with Masonite Corporation since 1939 when he became a company attorney. In 1940 Coates was named assistant secretary of the corporation and became general counsel the following year. He was elected to the Masonite Corporation Board of Directors in 1944. Prior to his association with Masonite Corporation, Coates was an attorney in the legal department of the New York Central Railroad. He is a graduate of the University of Wisconsin and the Harvard Law School.

Gardner-Richardson Elects Turner as Chairman

MIDDLETOWN, Ohio—At the annual Shareholders' Meeting of The Gardner-Richardson Company, the following Board of Directors was elected for the coming year: E. T. Gardner, Walter E. Sooy, Colin Gardner, Robert R. Richardson, R. B. Gardner, W. B. Turner, Colin Gardner, III, Carl Lehman, E. T. Gardner, Jr., A. R. Harvey, C. H. Avery.

Following this, W. B. Turner was elected Chairman of the Board; E. T. Gardner, President and General Manager; Colin Gardner, Vice-President; Walter E. Sooy, Vice-President; Robert R. Richardson, Vice-President and Secretary; E. T. Gardner, Jr., Treasurer and Assistant to the President; R. B. Gardner, Assistant Secretary; J. J. Hain, Assistant Treasurer, and R. O. Brosius, Assistant Treasurer.

Brig. Gen. Kabrich Joins Flintkote Research

Brig. Gen. W. C. Kabrich has joined the Flintkote Company as assistant director of Research at the East Rutherford Laboratory of the company. Recently retired from the United States Army, after nearly thirty years of service, General Kabrish has long been actively associated with chemical research, development and engineering. During World War II, as Chief of the Technical Division, Office of the Chief of Chemical Warfare Service of the War Department, from 1942 until August of 1945, he was charged with the research, development, engineering for production and actual initial procurement of all Chemical Warfare supplies for the U. S. Army.

Quality Control Group Invites Papermakers

SPRINGFIELD, Mass.—Recently organized, the Western Massachusetts Society for Quality Control held its first programmed meeting in Springfield recently with Joseph Manuele in charge of Quality Control for Westinghouse Electric Corporation as its guest speaker. The meeting was attended by about 60 representatives of western Massachusetts business covering a large variety of industries.

The Western Massachusetts Society was organized as an affiliate of the American Society for Quality Control with headquarters in New York by a small group of technically trained men in the Springfield area. The Executive Committee of the Society includes Morton M. Newcomb, American Bosch Corporation, Percival Gooding, Strathmore Paper Company, Robert Downton, Bigelow-Sanford Carpet Company, Inc., G. H. Cassaday, United Sttaes Rubber Company, Fisk Division, and Louis Young, Westinghouse Electric & Manufacturing Company.

Technical men in the Western Massachusetts area are invited by the Society to attend the next meeting to be held at the Highland Hotel, May 10th, at 6:30 P.M. The program at this meeting will feature George R. Vila, Assistant Development Manager of the Naugatuck Chemical & Synthetic Rubber Division of U. S. Rubber Corporation, who will speak on the Application of Statistical Quality Control to Synthetic Rubbers. The talk will be illustrated by a manufacturing film.

Southern Paperboard Opens Offices in Savannah

SAVANNAH, Ga.—Southern Paperboard Corporation has taken the western portion of the third floor of the Thomas Gamble Building here for offices, pending completion of its $9,000,000 kraft and paper mill at Port Wentworth.

According to present plans, the offices are to be renovated and additional heating, plumbing and rest room facilities installed. Southern Paperboard Corporation is expected to occupy the offices in about a month. Ernest C. Rossiter, consulting engineer for the Robert Gair Company, Inc., said the offices would be occupied about a year.

Hausen to Travel Midwest For Southern Advance

BOSTON, Mass.—John T. Hansen has joined the sales department of Southern Advance Bag and Paper Company, Inc., as assistant to the district sales manager in the Chicago office and will call upon the trade in the States of Wisconsin, Illinois and Indiana. Mr. Hansen was formerly in the Industrial Towel Division of Scott Paper Company.

Washington Finds Production Is Continuing at High Levels

WASHINGTON, D. C.—Substantially increased production of paper in the first two months of this year as compared with a year ago reflects improved market wood pulp supply, brought about through pulp imports from overseas. This was reported this week in the Bureau of Foreign and Domestic Commerce Survey for March and April. Outstanding increases are noted in the output of book, groundwood printing and tissue grades of paper. Paperboard production over-all was slightly less than in the first two months of 1945, with a moderate decline in container board but with large increases in folding boxboard and sanitary food container stock. Trade reports indicate that an even higher level of paper production was maintained in March, which should result in first quarter aggregate paper and board output (on an annual basis) in excess of 18,000,000 tons.

It is apparent that with domestic wood pulp production in the first two months of 1946 being six per cent less than in the same period of 1945 but with consumption by paper and board mills being up nine per cent, the deficit was made up from imported pulp.

A continuation of the current high level of paper production will be governed in large measure by the ability of those paper mills which purchase pulp to maintain capacity operations. This depends upon early resumption of pulp shipments from overseas. At the end of February inventories of purchased pulp at paper and paperboard mills amounted to 588,000 tons, mostly of imported stocks, the highest point since mid-1943. If monthly consumption of market pulp continues around 225,000 tons per month and if new supplies of domestic and Canadian market pulp of about 135,000 tons a month are maintained, pulp purchasing mills would have to withdraw 90,000 tons from inventory to equal present paper production if no overseas imports are received. Allowing for a retention of one month's working inventory these mills can operate until about July 1, before curtailment in production would appear to be necessary. This is the over-all statistical picture. Although recent announcement of price adjustments favorable to producers and importers has been made, there is, as usual, question as to when volume shipments from overseas will be received in this country. It may be that mills with inadequate reserves are using their stocks too rapidly. Each mill should evaluate its position and schedule its production accordingly.

Receipts and consumption of domestic market pulp, according to the report, have been downward since October last year whereas receipts and consumption of imported market pulp have increased steadily during this period. In the case of "own use" wood pulp by integrated paper and board mills the trend in production and consumption has been generally downward since November 1945, due principally to pulpwood conditions. Aggregate inventories of own pulp at pulp mills and paper and board mills have remained relatively constant.

Domestic production of pulp in January and February was below the same months of 1945, accounted for largely by the unusually wet weather in the South which handicapped pulpwood operations. Generally improved conditions both as respects weather and labor were reported during March. This should result in an upturn in domestic pulp output. However, the number of prisoners of war on pulpwood operations will soon be reduced. Complete withdrawal of this labor by the end of May is expected. Unless other labor can be secured during this period southern pulpwood and pulp production could again fall off.

To assist in pulpwood procurement the CPA placed pulpwood production equipment on the critical list early in March and CC ratings may now be obtained for pulpwood as well as for lumber equipment.

Consumption of waste paper continues at a high level but many mills report increasing difficulties in finding adequate supplies. Some apprehension has been expressed that exports are increasing and taking supplies away from domestic consumers. While exports have increased in the last few months January exports totaled only 2,317 tons, amounting to less than 0.4 per cent of receipts. Receipts of waste paper in February were 7 per cent above a year ago but nevertheless slightly below consumption. Inventories dropped about 6,000 tons in that month.

Labor problems in the pulp and paper segment of the industry have eased considerably with an addition of about 16,000 workers in the five-month period September through January. It is generally reported that the efficiency of mill labor has improved steadily with the return of skilled workers, particularly war veterans.

Paper distributors' sales (value basis) in the first two months of this year recorded a gain of 13 per cent over the same period of 1945. This reflects the increased quantities of paper available for civilian uses and also some price and grade changes.

CPA Sets Formula for Levy on Paper Board

WASHINGTON, D. C.—Criteria under which directives are issued upon boxboard manufacturers to supply the gypsum products industry with paper liner for making gypsum board and lath were made public this week by the Civilian Production Administration. The criteria are given in an amendment of Direction 5, gypsum board and lath, to Priorities Regulation 33.

The Civilian Production Administration has endeavored for the past five months to increase production by issuing directives, under the Second War Powers Act, requiring certain paper liner manufacturers to deliver gypsum liner to makers of gypsum board and lath.

The production of gypsum liner covered by the directives says CPA, will be distributed among the boxboard mills in as equitable a manner as is possible taking into account the following:

(1) The facilities of all mills in the boxboard field which can produce either cream-faced, greyback of lath board and which have suitable machines and roll equipment for the production of liner of the basic weight required.

(2) From the total tonnage of gypsum liner needed to produce the required tonnage of gypsum board and lath for housing and other essential construction, including maintenance and repair, there will be essential construction, including maintenance and repair, there will be deducted the tonnage of gypsum liner being produced by the regular suppliers of gypsum for the gypsum board and lath producers.

The additional tonnage of liner necessary to meet the requirements for gypsum board and gypsum lath will be spread through the means of directives among the boxboard mills on an approximate percentage basis of their production, calculated on the boxboard and miscellaneous board produced by them during the first three months of 1946.

Witco Merges Dill into Pacific Coast Division

The Witco Chemical Company announces the consolidation of the Marshall Dill organization, San Francisco, with the Pacific Coast activities of Witco. Established in 1900 as a sales organization covering the western part of the United States for domestic and foreign manufacturers, Marshall Dill during the intervening years has developed extensive export and import business. The Dill organization has offices and warehouses in San Francisco and Los Angeles, with additional outlets in Portland, Spokane, Seattle and Denver. Mr. Dill has been elected a vice-president of the Witco Chemical Company, in charge of the California division.

CPA Head Cites Need of Newsprint Control

Uncertainties in the outlook for newsprint production make it imperative that inventory controls be retained for the time being, Civilian Production Administrator John D. Small told the Newspaper Industry Advisory Committee last week at a meeting in the Waldorf-Astoria Hotel, New York.

Mr. Small said that any of the following dangers, or a combination of them, might quickly upset the present precarious balance of newsprint production and distribution:

1. The current coal strike, which — unless it is settled soon — may force drastic curtailment of newsprint production.

2. The shortage of labor in pulpwood-producing areas, coupled with the possibility of strikes by woodsmen.

3. Should price controls be seriously curtailed by the Congress, only inventory controls would remain as a bulwark against a competitive scramble.

Mr. Small said inventory controls protected the freedom of the press by making paper available to many of the smaller newsprint users who might suffer if the controls were lifted before newsprint becomes more plentiful. The controls work no hardship on any user, he added.

(Present controls limit the inventories of newsprint users in eastern and central states to 30 days' supply, and allow 50 days' supply to users in southern and western states. Any user is allowed at least 60 tons.)

Marathon Staggers Work Week For Its Office Employes

MENASHA, Wis.—Marathon Corporation started a rotating staggered work week, Monday, April 29, for office employes. The new program will run for a four-month trial period and there will be no change in the 40-hour work week. Office hours will be so arranged that some Saturday mornings will be free to some employes on a staggered basis. The office hours will be from 8 to 12 o'clock in the morning and from 1 to 5 o'clock in the afternoon from Monday through Friday, and from 8 to 12 o'clock on Saturday mornings. Employes who work on Saturday mornings will have had the preceding Monday morning off, thus working only 40 hours in one week.

Edgewater Paper Celebrates Thirtieth Anniversary

MENASHA, Wis. — Employes of the Edgewater Paper Company, observed the thirtieth anniversary of the company's founding and dedicated the new building at a dinner April 20. The company was founded by G. W. Young, Sr., in April, 1916, when ground was broken for its first building.

J. D. Young, president of the company, was presented with a gold watch by the employes, for 30 years of service. G. W. Young, Jr., vice president and treasurer, gave a brief history of the company. John Roberts, Neenah, and Mike Spellman, Menasha, with the company 27 and 20 years respectively before their retirement, were guests at the dinner.

The company does not expect to use the new paper converting building for manufacturing until late in the fall, because it is too busy catching up with a large backlog of orders and cannot move the equipment at present. Meanwhile, the new plant will be used for storage. Later the 30-year old building will become a storage warehouse. The new building is 70 by 76 feet and is of steel, concrete and brick construction. It has been added to a building erected 15 years ago and the two will offer a 70 by 152 foot room in which the company's converting equipment will be placed.

Tissue Mills Plant to be Placed on the Market

HOLYOKE, Mass. — The American Tissue Mills yesterday announced that its former wax paper division on Winter Street is for sale. This plant was closed in 1940, when all the company's converting operations were consolidated in the Crescent Street division.

The Worthington Pump Company leased it for the war duration. The lease expired in December and Worthington passed up its option to buy the mill.

Several offers have been made for it since, but the prices were not satisfactory to the company.

Berkshire Papers Moves To Larger Quarters

CHICAGO—On May first Berkshire Papers Inc. moved to 1520 West Fulton Street. The new Berkshire building is a modern concrete construction warehouse with sufficient floor space to permit needed expansion. New equipment and new methods of storing are expected to improve handling of paper in and out of the warehouse. The office space is large enough to alleviate any crowding. Altogether Berkshire's new home provides much better facilities for conducting a paper merchandising business.

Hudson Pulp Employes to Vote On Union Preference

BELLOWS FALLS, Vt. — An election will be held here shortly to determine whether 150 production and maintenance employes of the Moore & Thompson division of the Hudson Pulp and Paper Corp. wish to join the International Brotherhood of Paper Makers (AFL) or the United Electrical, Radio & Machine Workers of America (CIO).

Paper Mill Unions Seek Higher Scale

HOLYOKE, Mass. — Holyoke paper mill unions are asking for another 12½ cents an hour wage increase in the opening of negotiations for a new contract to become effective June 1. Representatives of Eagle Lodge of Papermakers and the Holyoke Paper Mill Workers Union, both AFL, laid before Harold T. Martin, labor adviser to the manufacturers, the demands in the new contract recently.

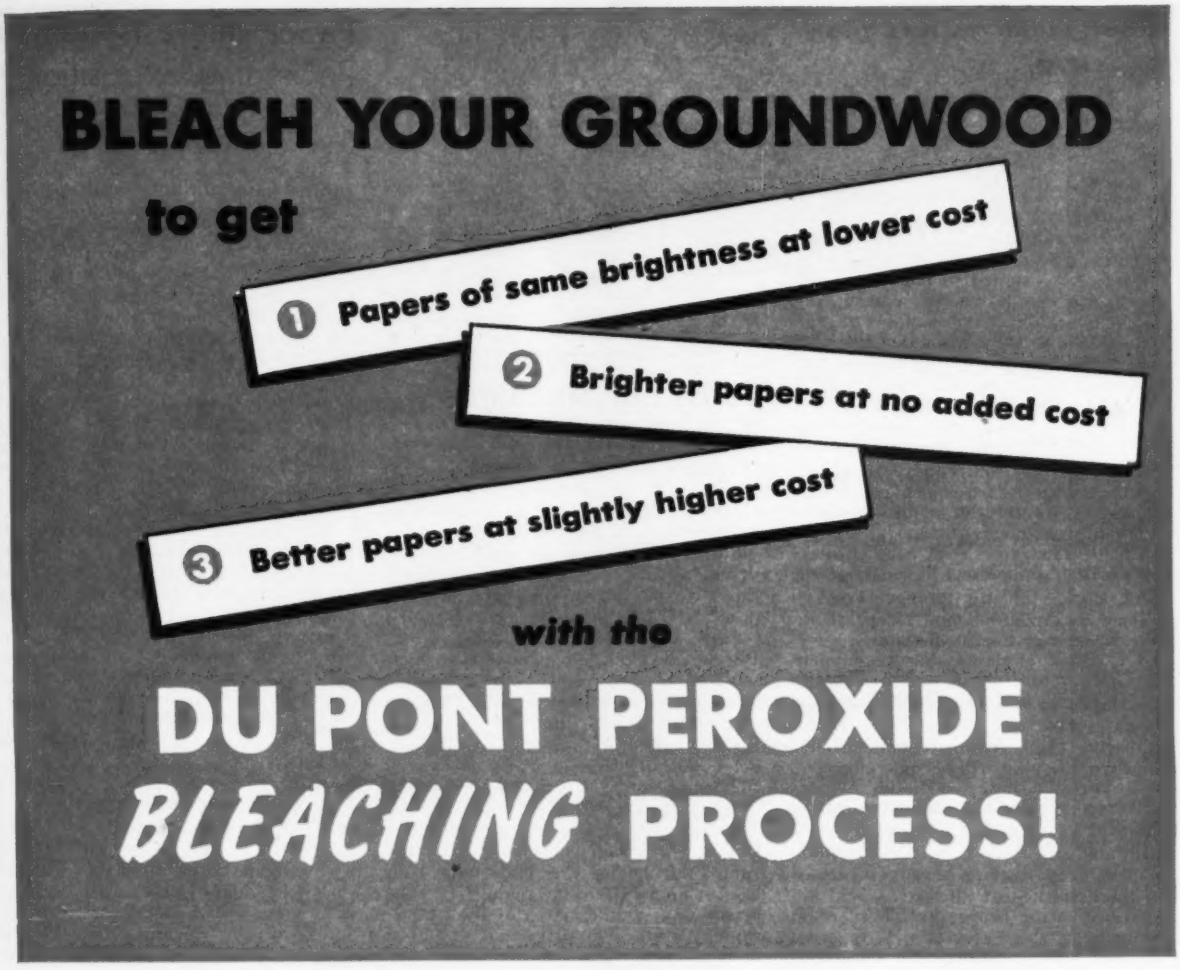
In the new contract the workers are also demanding three additional holiday pays, bringing to a total of six the holidays with pay not worked; reduction from five to three years of the requirements of eligibility for a two-week vacation with pay; group hospitalization and a voluntary checkoff of union dues.

Eagle Lodge membership includes the manufacturing trades in six local paper mills and the Holyoke Paper Mill Workers union represents workers in the finishing trades. Martin will advise his clients of the union demands.

Paper Makers Seek Pay Boost At Canadian International

MONTREAL—As a result of negotiations between representatives of the American Federation of Labor and the Canadian International Paper Company, an agreement has been arrived at by which both parties will make application to the Regional War Labor Board for approval of a ten-cents-an-hour general wage increase, effective May 1, for approximately 5,000 production and maintenance employees in the company's mills at Three Rivers, Gatineau, Dalhousie, Temiskaming and Hawkesbury. The agreement is a compromise on the Unions' request for a six-hour day with eight hours pay and a 36-hour week, plus a 16-cents-per-hour general wage increase and four cents per hour premium pay for night workers.

Chairman at the two-day meeting at which the agreement was arrived at was J. Arthur D'Aoust, vice-president and Canadian regional director of the International Brotherhood of Paper Makers, and in addition to delegates from local unions, those attending included Matthew J. Burns, president of the Paper Makers Unions; John P. Burke, president of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers; also international representatives of the Machinists, Electrical and Steamfitters Unions. Spokesmen for the Company were Fred L. Allen, manager of manufacturing, Canadian International Paper Newsprint Division; Thomas Robinson, Canadian International Manager of Industrial Relations; and George Adams, of Glens Falls, Manager of Industrial Relations for the International Paper Company.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Dean Illick Approves Forest Practice Law

SYRACUSE, N. Y.—The Forest Practice Standards Law passed by the Legislature and signed by Governor Dewey this year may be beneficially applied to every privately owned woodland in the State, according to Dr. Joseph S. Illick, dean of The New York State College of Forestry. He points out that the law is designed to encourage forestry, prevent destructive cutting, and to help stabilize the supply of raw material to wood-using industries. The law authorizes the Conservation Commissioner to set up not more than 20 forest districts in the State.

The law provides for District Forest Practice Boards to consist of three members from each county in a District. A State Board is also authorized, composed of the Dean of the New York State College of Agriculture, the Dean of The New York State College of Forestry, and the Chairman of the New York State Conference Board of Farm Organizations, and a representative from each forest district.

Dr. Illick explains that recommendations for forest practice standards in each district will be submitted to the State Board, and if the State Board and the Conservation Commissioner approve, the plan will become effective, and participating woodland owners will receive State assistance through the district forester. The State Board will act as advisor to the Commissioner, keep district boards informed of the activities of all boards, and aid in coordinating programs. There is no compulsion about this law. It is based on the willing cooperation of woodland owners and should in the end, enhance the value of their forest properties.

Safety Conferences Opens At the Hotel Sherman

CHICAGO—The Midwest Safety Conference and Exposition will hold its twenty-third annual program at the Sherman Hotel, Chicago, on May 7, 8 and 9. The usual panel discussions will be held and a fair representation of safety experts identified with the paper and pulp manufacturing trade is expected to be on hand for sessions covering Industrial Safety, Electrical Hazards in Industry, and Industrial Hygiene in particular. A wide variety of exhibits of safety and prevention equipment, most of it indicating the strides in perfection during the war years, will provide a part of the interesting program.

Weather Bureau Strengthens Its Forest Fire Forecasts

OTTAWA — More highly specialized forest weather forecasts are being planned by the Federal Government's weather bureau in order to cut down the yearly loss of more than one billion cubic feet of timber, mostly destroyed through fire. This wastage, according to advices from Ottawa, is enough to run Canada's pulp and paper industry for one year and a half.

Special forecasts are now made one to two days in advance of such major weather changes as will dry out the forests and bring high winds to make fires difficult to control. Heavy concentrations of fire-starting lightning storms are also predicted, and fire control agencies are warned of forest areas which would suffer from this greatest single cause of forest fires.

Bureau of Standards Tests Resin Bond

WASHINGTON, D. C.—Fuller realization of the great potential value of resin bonding in the preparation of printing papers, particularly papers for multicolor offset lithography, is the drive behind new tests under way at the National Bureau of Standards, Department of Commerce.

In cooperation with the industry, the Bureau developed a map paper which withstood the roughest kind of treatment under wartime combat conditions. For this paper, insoluble synthetic resin bonds were substituted for the gel bonds in common use.

The present investigation resumes the cooperative work between the Bureau's Paper Section and the Lithographic Technical Foundation, interrupted during the war. The Foundation has set up an advisory committee, comprised of representatives of the lithographic printing industry and of paper manufacturers and makers of paper raw materials. The committee not only provides guidance for the tests but is in position to put the findings into immediate practice.

In announcing the new investigation, the Bureau stated:

"Objectives include the conservation of basic raw materials by permitting the increased use of widely available short-fibered pulps, and improvement in the performance of papers in printing.

"By the experimental manufacture of papers in the Bureau's semi-commercial mill, information is being obtained on:

"(1) The extent to which papers of the usual fiber composition can be improved as regards expansion, curling, and linting by resin bonding instead of gelatinization by beating.

"(2) The possibility of using a greater proportion of short resilient fibers that improve printing qualities but do not develop suitable sheet strength by gelatinization.

"(3) The feasibility of making lithographic papers wholly or in part from newly developed deciduous wood pulps for better utilization of our wood resources.

"Preliminary results have indicated the great potential value of the resin bonding."

Paper Interests Join In Packaging Exposition

CHICAGO — The paper trade took an imposing part in the 1946 Industrial Packaging Exposition held at the Hotel Sherman, April 24, 25 and 26. Sponsored by the Industrial Packaging Engineers Association of America, the Council and its splendid program was headed by general chairman Irving Stoller of Bradner Smith & Company. On various working committees were Allyn Whitehead, Sherman Paper Products Corporation; Rose Orlin, Inlander-Steindler Company; Burton Lee Trodson, Mid-States Gummed Paper Company; C. F. Fuller, Continental Wood Products, Inc.; P. O. Pedersen, Rapiwax Paper Company; George Stucke, Sherman Paper Products Corporation; and R. H. Clouch, Zimmer Paper Products Company.

The list of exhibitors included the Gaylord Container Corporation; Gummed Products Company; Container Company division of Continental Can Company; Fox Paper Company; Kimberly-Clark Corporation; Mid-States Gummed Paper Company, and the Sherman Paper Products Corporation. Exhibited under the heading "The Industrial Phase," the exhibits represented a practical down-to-earth school of packaging for product protection.

The program itself presented a sequence of speakers well and favorably known to the trade beginning with Eugene Preston of the Sherman Paper Products Corporation who presided over a session on Interior Packaging on the opening day. On the morning of April 25, A. C. McGeath, American Box Board Company, presided over a most interesting session on Corrugated and Solid Fibre Boxes wherein the speakers discussed what is being done by the railroads, box manufacturers and shippers in working out protective devices and treatment in a lowering of loss and damage claims. At noon, Paul Burbank of the American Air Lines discussed the same problem from the air cargo standpoint. On the afternoon of Friday, April 26, the report of the Standards and Specifications Committee was made by S. H. Tompkins of the Crescent Paper Company.

In summarizing the program for the week reports indicated that the studies being made by various groups to inject more protective devices and procedures to prevent spoilage and damage claims were the highlights of the session. As McGeath of American Box Board pointed out, during the war years the freight carriers, the board and box makers and the shippers were unable to adequately carry out their respective obligations in the safe packing and shipping of consumer goods, with all these factors contributing to the heavy increase in claims. The industry believes that only through a thorough understanding of mutual problems can the consumer be satisfied.

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New England Merchants Listen to Leathers

BOSTON, Mass.—Willard G. Leathers assistant secretary, National Paper Trade Association, spoke at a meeting of Wrapping Paper Division of The New England Paper Merchants Association, Inc., at the Parker House April 23. Numerous matters of present interest and future importance to wrapping paper merchants filled his talk, including the semi-annual convention in Chicago, first week of November; contemplated new services of the Association (employment of a full time industrial engineer to work on improving operating and merchandising efficiency of the NPTA membership as a whole, as well as individually, etc.); streamlining lines; increased production prospects; surplus government paper problems and plans, twine, OPA in Washington; The Yellow Book, and importance of a strong membership.

Norman E. Scott, Executive Secretary, spoke concerning the favorable progress of the new member program; State government problems in obtaining certain paper requirements, and sales, through War Assets Administration, of paper declared surplus by U. S. Army and Navy. Floyd H. Blackman, Regional Wrapping Paper Member of NPTA Board of Directors and Executive Committee, reported officially with reference to special meetings he attended at the recent convention in New York, including OPA Wrapping Paper Merchants Advisory Committee.

President James J. Dwyer opened the meeting with appropriate remarks and introduction of Walter G. Butler, Vice President, Wrapping Paper Division, who presided thereafter.

Some 40 Wrapping Paper members attended from various parts of New England, including Atwood Paper Company, Ralph F. Bass., Inc., H. Berger Paper Company, Cubell Paper Company, Fort Hill Paper Company, G. & S. Paper Company, Ginsburg Brothers, Inc., Industrial Paper & Cordage Co., D. F. Munroe Company, Perkins & Butler, Inc., Robbins Paper Company, Service Paper Company, Stimpson, Inc., Stone & Forsyth Company, United Paper Company, Whitney Brothers, Inc., Andrews Paper Company, Carter, Rice & Co., Corp., John S. Cheever Co., H. J. Dowd Company, Narragansett Paper Company, Providence Paper Company, and Storrs & Bement Co. (guest).

Murray Retires After 65 Years With Crane

DALTON, Mass. — Frederick Roland Murray has retired after serving Crane & Company for 65 years and three months. He was 15 when he was given a job on a paper cutter by Zenas Crane. That was a permanent job, although he was working part time for the company for some time before that. He remembers that when he started one of the company sidelines was making paper for collars, a national style note during the post Civil War depression. During his long service he worked in every mill of the company, ending up as foreman of the rag room of the Government Mill, where paper for currency is made.

HOUSING SHORTAGE NOTE

SPRINGFIELD, Mass.—Legal experts of the Strathmore Paper Company are engaged in a study of the internal revenue law in an attempt to assist a young woman employe. Mrs. Benjamin Kania received a $9,600 model home given away free at a model homes exposition here and now finds that she owes the United States government $2000 in taxes. Strathmore legal talent is endeavoring to find a clause in the law which might exempt her from the $2000 tax bill she "won" when she took the house.

Flambeau Calls Patterson Back to Post at Mill

CHICAGO—The Chicago paper trade and the Salesmen's Association of the Paper Industry, western division, is taking this week to congratulate one of its popular members on a step up the paper trade ladder. Forrest "Pat" Patterson, Flambeau Paper Company and president of the Salesmens Association of the Paper Industry, has been transferred to the Flambeau mills where he will continue to act as assistant sales manager. The transfer, which became effective this week, actually means a return to "home base" for Mr. Patterson, inasmuch as he spent over ten years at the mill before coming to the Chicago offices in the Conway Building where he has been located since 1937. "Pat," a graduate of Knox College, has spent virtually all of his business career with the Flambeau organization. According to James H. Coy, vice president of Flambeau, there will be no successor named for Mr. Patterson, the veteran paper sales executive announcing that he will simply "hold forth for and by himself" at the Conway Building headquarters.

Quaker City Buys Yeagley

PHILADELPHIA—Quaker City Paper Company has purchased the Yeagley Paper and Twine Company of York. It is to be operated as the Yeagley Paper Division, with William B. Yeagley, former owner, continuing as manager. Mr. Yeagley, formerly with the Andrews Paper House of York, is also a veteran of World War II. Associated with him will be Morris S. Boyer, an ex-serviceman and formerly connected with the Andrews Paper Co., who will act as sales representative.

Tilden Tells Sapeyes of Pacific Campaign

CHICAGO—The record breaking audience of salesmen and guests who attended the regular Monday, April 15, meeting of the western Division of the SAPEYES at the Hotel Sherman came away richly rewarded for their time. The speaker was one of their own members, Lieutenant William J. Tilden of the Mead Sales Company who gave a graphic and stirring account of the Pacific fleet campaign. Mr. Tilden, now back in civilian life, had ample opportunity to observe the entire campaign and to participate in it as a member of the staff of Vice Admiral Montgomery.

Using a map of the Pacific waters, Mr. Tilden traced the campaign and graphically pointed out how the tide turned in favor of the American forces when ships, production and trained personnel began to show and to tip the scales in the favor of our forces. From a ringside seat background Bill Tilden told all that could be told and, with typical modesty, preferred to pay the tribute for victory to the production forces and the taxpayers who produced the materials for war. However, after hearing that talk, there was no doubt in the minds of the salesmen and their guests that the real reason for victory — "the V in Victory" as Archie Hepburn so admirably put it— was the finely trained and courageous personnel of the United States Navy. Mr. Hepburn, Tomahawk Kraft Paper Company, introduced Mr. Tilden in the absence of Eddie Edwards, western division vice president.

Waxed Paper Institute Moves to New Quarters

CHICAGO — Increased activities throughout the waxed paper industry have necessitated the moving of the administrative offices of the Waxed Paper Institute, Incorporated, to more spacious quarters in the First National Bank Building, 38 South Dearborn Street. The new offices were formally opened April 15. 1946.

The new headquarters will serve as an information exchange for members of the industry, where a complete library will be available of statistical data and comprehensive research material on all phases of waxed paper. W. Vernon Brumbaugh, formerly of Washington, D. C., will now make his permanent headquarters in Chicago as assistant to Mr. Noelke.

Gypsum Profits Up 140 Per Cent

BUFFALO, N. Y.—The National Gypsum Company's net profit for the quarter ended March 31 rose 140 per cent to $673,960 compared with $281,491 in the like 1945 period. Sales in the March quarter were up 13 per cent to $7,526,000 from $6,636,476 in the same quarter last year.

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St. Lawrence Prospects Are Found Improving

MONTREAL—A fairly representative statement of the prospects for the newsprint industry as a whole during the present year was presented at the annual general meeting in Montreal of the St. Lawrence Paper Mills Company Limited by Arthur F. White, vice-president and managing director. Remarking that last year's output of newsprint was equivalent to 72 per cent of the mill's rated capacity, due to inadequate supplies of pulpwood, he said the company enters the current year with sufficient wood to provide only a 75 per cent operation for the first six months, but, assuming satisfactory deliveries of wood during the summer, the mill is expected to run at full capacity for the last half of the year, making an average of 87½ per cent for the full year. If this estimate is realized profits in 1946 should show a marked improvement.

Commenting on the operations of the Corporation's subsidiary, Lake St. John Power and Paper Company, he said that newsprint sales were at the rate of 64 per cent of capacity and in addition 23,537 tons of sulphite pulp were produced. The outlook for the current year, he said, was somewhat better. With good fortune, the year's output of newsprint may go as high as 85, or even 90 per cent, of capacity, but sulphite production would be reduced to an estimated 15,000 tons.

He indicated the possibility of somewhat higher dividends on the St. Lawrence Company's preferred stock, and in regard to the Lake St. John Company, said the notes payable by the Hearst Companies, shown in the balance sheet at $314,749, were paid in full on March 30 of this year.

Discussing the affairs of St. Lawrence Corporation Limited, he expressed the view that earnings for the year would show an improvement over those for 1945. The new Red Rock mill of the Brompton company, which St. Lawrence Corporation controls, came into operation this year. It had a theoretical capacity of 200 tons per day, but the mill had already produced 207 tons in one day's run, and could be expected to increase gradually to a daily rate of 250 tons as operation is improved and refined.

Gair Net is Doubled For First Quarter

Robert Gair Company, Inc. and Subsidiaries report for the quarter ended March 31, 1946, combined net profit of $407,095 after provision of $210,000 for U. S. Federal Income Taxes, equal after Preferred dividends to 19.6c per share on 1,641,924 shares of Common Stock. For the first quarter of 1945, the combined net profit was $205,830 after provision of $531,000 for U. S. Federal Income and Excess Profits Taxes, equal after Preferred dividends to 13.2c per share on 1,133,822 shares of Common Stock.

Kimberly-Clark Profits Up Ten Per Cent for Quarter

NEENAH, Wis. — Kimberly-Clark Corporation's statement, released here last week, shows net profit of $644,651.24 for the three months ended March 31, 1946, after provision for income taxes and preferred stock dividends. This is equivalent to $1.07 per share of the 599,760 shares of common stock outstanding, and compares with 98 cents per share for the corresponding quarter in 1945.

The corporation reported sales of $15,012,060 and profits before taxes of $1,160,165 for the quarter. Taxes were estimated at $412,287 for the three-month period.

Mando Earnings Up $200,000 For First Quarter of Year

MINNEAPOLIS—Consolidated net income of the Minnesota and Ontario Paper Company for the first quarter of 1946 was $495,319 as compared with $294,438 for the same period in 1945. The Company has instituted proceedings to effect the redemption as of June 1, 1946 of $2,700,000 in principal amount of its outstanding bonds, which together with the payment of the June 1, 1946 maturity of $300,000 (total $3,000,000) will reduce its Funded Debt to $3,000,000.

Donald D. Davis, President of Minnesota and Ontario Paper Company, announced that at the annual meeting of the shareholders, held on April 22, all Directors were re-elected, and at the annual meeting of the directors, the following officers were elected: Chairman of the Board, R. H. M. Robinson; President, Donald D. Davis; Vice President in Charge of Production, R. W. Andrews; Vice President in Charge of Sales, C. T. McMurray; Secretary and Treasurer, R. D. Main; Comptroller, F. J. Hickling; Assistant Treasurer, G. H. Hardisty; Assistant Secretary, H. A. Hull.

Mr. Davis also stated that as the result of the purchase by the Minnesota and Ontario Paper Company of the National Pole & Treating Co. the assets of the latter company are now in process of being distributed to its shareholders.

S. D. Warren Declares Dividend

BOSTON, Mass.—A dividend of 75 cents per share has been declared upon the common stock of S. D. Warren Co., payable June 1, 1946, to holders of record at the close of business May 18, 1946. A dividend of $1.13 per share has been declared upon the $4.50 cumulative preferred stock of the company, payable June 1, 1946.

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending April 27, 1946

STOCKS

	High	Low	Last
A. P. W.	10	9	9⅝
Armstrong Cork Co.	64¼	61½	62
Celotex Corp.	30⅞	28⅜	29
Celotex Corp., pf.	21½	21	21
Certain-Teed Products Corp.	22½	20⅝	22
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	62½	59¼	62½
Champion Paper & Fibre Co., pf.	112½	111⅛	112½
Congoleum Nairn Co.	37¼	36	36⅛
Container Corp. of America	53	50¾	52
Continental-Diamond Fibre Co.	16¼	15	15¼
Crown-Zellerbach Co.	39⅝	35½	36¾
Crown-Zellerbach Co., pf.	108½	108	108
Dixie Cup Co.	52	49	51½
Dixie Cup Co.—A	57	55¼	57
Flintkote Co.	45	42¾	44¼
Flintkote Co., pf.	113⅞	113	113
Robert Gair	10⅜	9½	10¼
Robert Gair, pf.	21	20½	20½
International Paper Co.	52⅜	48¾	50¾
International Paper Co., pf.	130⅜	123	126
Johns-Manville Corp.	162½	162	162½
Johns-Manville Corp., pf.	147	147	147
Kimberly-Clark Corp.	69½	66	66
Mac Andrews & Forbes	42½	40	42½
Mac Andrews & Forbes, pf.	....	....	....
Masonite Corp.	74	71½	72
Mead Corp.	30⅝	26¾	28½
Mead Corp., pf. A—6%	108	108	108
Mead Corp., pf. B—5½%	107½	106¾	107
National Container Corp.	35¼	33	33½
Paraffine Companies, Inc.	90⅛	89	89
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	28⅛	26⅝	27⅞
Rayonier, Inc., pf.	38⅛	37	37½
Ruberoid Co.	53½	52	52
Scott Paper Co.	57⅞	54¼	55
Scott Paper Co., pf.	....	....	....
Sutherland Paper Co.	53½	50	52
Union Bag & Paper Corp.	36	33⅛	34⅜
United Paperboard Co.	15⅛	12	15
U. S. Gypsum Co.	125½	121⅞	122
U. S. Gypsum Co., pf.	204	204	204
West Virginia Pulp & Paper Co.	49	47½	47¾
West Virginia Pulp & Paper Co., pf.	....	....	....

BONDS

Abitibi Pulp & Paper Co. 5s '53	109¼	108½	109
Celotex Corp. 3¾s '55	....	....	....
Certain-Teed Products Corp. 5½s '53	....	....	....
Champion Paper & Fibre Co. 3s '65	105½	105	105
International Paper Co. 5s '47	102⅜	102 5/32	102 3/32
Mead Corp. 3½s '53	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending April 27, 1946

STOCKS

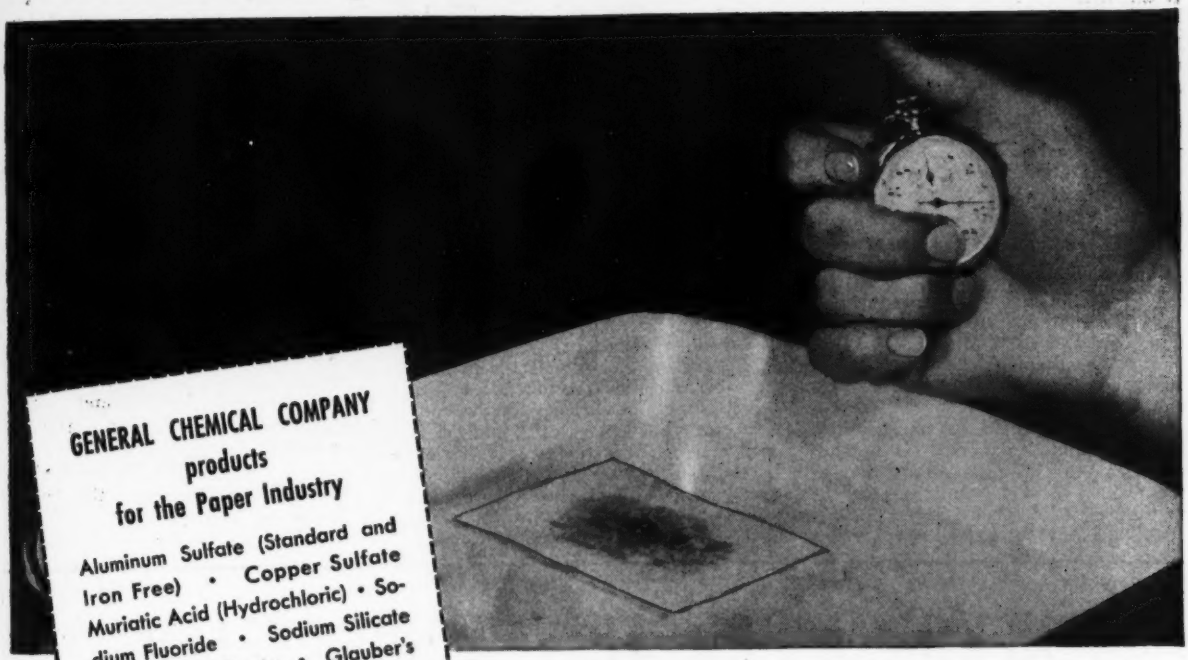
	High	Low	Last
Great Northern Paper Co.	43	41¼	41¾
Hummel-Ross Fibre Corp.	18	17	17½
St. Regis Paper Co.	11¾	11⅛	11½
St. Regis Paper Co., pf.	....	....	....
Taggart Corp.	9½	9	9⅛

BONDS

American Writing Paper Co. 6s '61	....	....	....

SPECIFY "GENERAL CHEMICAL"

for effective pH control and maximum sizing



GENERAL CHEMICAL COMPANY products for the Paper Industry

Aluminum Sulfate (Standard and Iron Free) • Copper Sulfate • Muriatic Acid (Hydrochloric) • Sodium Fluoride • Sodium Silicate • Sodium Metasilicate • Glauber's Salt (Crystal or Anhydrous) • Salt Cake • Sodium Sulfide • Sodium Hyposulfite • Sodium Sulfite (Anhydrous) • Sodium Bisulfite (Solution or Anhydrous) • Disodium Phosphate • Trisodium Phosphate • Tetrasodium Pyrophosphate • Sulfuric Acid • Nitre Cake (Sodium Bisulfate) • Nitric Acid

TODAY more than ever, paper makers are insisting on General Chemical "Alum" in their operations because they can rely on its uniformity for maximum sizing and desired pH.

Careful attention to all production details plus constant laboratory control make General Chemical Aluminum Sulfate a product of high quality in its various grades. Specify "General" for your quality paper-making chemicals!

ALUMINUM SULFATE

Standard—Lump; Ground 99% thru 8 mesh, 95% thru 10 mesh; Powdered 95% thru 100 mesh.

Iron Free—Lump approx. 2½"; Ground thru 8 mesh.

SODIUM SILICATE

Solutions: from 38°—60° Baume. Wt. Ratio (Na_2O to SiO_2) from 1:2.00—1:3.40.

Appearance: Opalescent to clear.

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FOR AMERICAN INDUSTRY

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Sales and Technical Service Offices: Atlanta • Baltimore • Boston • Bridgeport (Conn.) • Buffalo Charlotte (N. C.) • Chicago • Cleveland • Denver • Detroit • Houston • Kansas City Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh • Providence (R. I.) San Francisco • Seattle • St. Louis • Utica (N. Y.) • Wenatchee • Yakima (Wash.)

In Wisconsin: General Chemical Wisconsin Corporation, Milwaukee, Wis.

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

Standards Bureau Completes Study on Mildew Damage

WASHINGTON, D. C.—The National Bureau of Standards has completed an investigation of the effect of mildew on various sheet materials used to line shipping cases. The investigation was one of the Bureau's wartime studies. It was made at the request of the War Production Board to find the resistance of the materials to deterioration by mildewing, resulting from the high temperature and humidity of tropical regions.

The sheetings comprised 24 asphalt-laminated kraft papers, some of which were reinforced with scrim cloth or strands of fibers imbedded in the asphalt, and several sheetings of various compositions.

Samples of the sheetings were hung in a room maintained under tropical conditions and specimens were removed at the end of 4 successive 4-week periods and tested for deterioration.

The caselining materials all decreased in strength, stretch and water resistance but some were more resistant than others. Of 18 unreinforced kraft laminated papers, the number showing practically no deterioration at the end of 4 weeks exposure was 8; at the end of 8 weeks, 3; at the end of 12 weeks, 1; at the end of 16 weeks none. Papers reinforced with strands of sisal fibers or jute scrim cloth deteriorated much more rapidly than the other laminated papers and the growth of mildew was heavier on the lines of the reinforcing material than on the other part of the sheet. The maximum percentage decreases from the original tearing resistance, tensile strength, stretch, and water resistance of the asphalt-laminated kraft papers were, respectively, 70, 80, 70, and 90. Sheetings with cotton wadding or cotton cloth as a component also deteriorated much more rapidly than the kraft laminated papers containing no reinforcing material.

Champion-International Names Two New Vice-Presidents

LAWRENCE, Mass.—At a recent meeting of the Board of Directors of the Champion-International Company, Mr. L. B. Rogers, and Mr. J. F. Raichlen were elected Vice-Presidents.

Mr. Rogers has been with the company for thirty-two years, and is in charge of manufacturing. Mr. Raichlen has been with the company for twelve years as New York representative. He is now at Lawrence, and is in charge of sales.

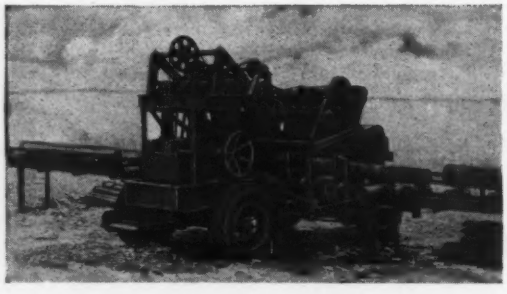
Professional Group Studies Starch Crisis

CHICAGO — Ample evidence of the importance of the grave shortage in the starch industry turned up when the Chicago Professional Paper Group held its long awaited forum and panel discussion on "Weathering the Starch Crisis." Between 150 and 200 members and guests came to the Chicago Bar Association dining rooms for dinner and the conference in which the following gentlemen participated: J. V. Bauer, Stein-Hall & Company; E. S. Gantt, Corn Products Refining Company; L. J. Hayhurst, Hayhurst Research Laboratory; J. E. Killinger, Penick & Ford; Fred Sanders, National Starch Products; Don Thom, F. G. Findley & Company and E. W. Morton, American Bitumuls Company.

The discussion period opened with Joe Kubicka, program chairman, in charge. As presiding officer, he relayed to the panel of experts the written questions which members of the Group had sent in since the announcement of the meeting. Then Harry Weston, Fritz Publications and head of the Chicago Professional Paper Group, took over and for nearly an hour the questions came thick and fast, questions pertinent to the critical situation which confronts the industrial user of starch-based adhesives and other products.

NEKOOSA PORTABLE WOOD PEELER

Savings



ADAPTABLE TO A VARIETY OF OPERATING CONDITIONS

If wood is peeled in the woods freight on bark is eliminated, less weight per cord of wood is shipped thus reducing freight. Shrinkage per cord is reduced. Wood can be peeled mechanically at less cost than the differential between peeled and rough wood.

Large Capacity
Low Cost Operation
No Wood Loss

manufactured by

Nekoosa Foundry & Machine Works Inc.

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To help increase "Take-Home Savings"

THE Treasury Department has published two new booklets to help you and your employees realize the utmost benefit from your Payroll Savings Plan—benefits proportioned to the extent your employees add to "take home savings" by buying and holding U. S. Savings Bonds.

"Peacetime Payroll Savings Plan" for key executives offers helpful suggestions on the conduct of the Payroll Savings Plan. In addition, it quotes leaders of Industry and Labor and their reasons for supporting the Plan.

"This Time It's For You" is for distribution to employees. It explains graphically how this convenient, easy thrift habit works. It suggest goals to save for and how much to set aside regularly in order to attain their objectives. If you have not received these two booklets, or desire additional quantities, communicate with your State Director of the Treasury Department's Savings Bond Division.

See your Payroll Savings Plan through to maintain your share in America's future. It is sound economics and a powerful force for good today—and tomorrow—as a safeguard for stability and a reserve of future purchasing power—money that is kept within your community.

The Treasury Department acknowledges with appreciation the publication of this message by

PAPER TRADE JOURNAL

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and Advertising Council

British Columbia Organizes To Fight Forest Insects

VANCOUVER, B. C.—British Columbia's timber industry has organized to wage scientific war on the province's forest insects, which are known to take a greater toll than fire of old growth Coast forests.

A voluntary committee, headed by Hugh J. Hodgins, chief forester of Pacific Mills Ltd., and comprising members of the Coast forest industry, the British Columbia Forest Service and the Dominion department of agriculture's science service, has been formed to plan and carry out intensive warfare against insect infestation. It is called the "Western Forest Entomology Committee."

The committee will:

1. Assist in complete annual surveys of forest insect conditions. (The major problem at present is the hemlock looper in Coast forests.)
2. Distribute insect literature to help the industry fight the looper, the hemlock sawfly, red alder sawfly, blackheaded budworm and spruce aphid.
3. Instruct the industry in ways to report, map and identify insect damage.
4. Take measures to control or obliterate insect activities.

Worst of all at the moment is the hemlock looper. This insect is causing severe timber loss on the southwest part of Vancouver Island, reports Dr. H. A. Richmond, officer-in-charge of forest entomology for the Dominion Government's science service in Victoria.

This region, he says, holds one of the largest blocks of virgin timber reserves on the Coast, estimated at between 15 and 20 billion board feet. Not only are losses from insect damage a great blow to that region, but great damage lies in possible infestation spreading to other major hemlock reserves.

H. J. Hodgins was elected chairman of the committee. Vice-chairman is F. S. McKinnon, B. C. Forest Service, Victoria; secretary is H. A. Richmond. Five directors will be chosen from logging, lumbering and allied groups.

Blaw-Knox Company Acquires Ross Supertherm System

Arrangements have been completed whereby the Blaw-Knox Company of Pittsburgh takes over from the J. O. Ross Engineering Corporation of New York all engineering, sales, fabricating and installation of the Ross Supertherm Hot Water Heating System in North and South America.

Dr. Pigman Joins Institute Organic Chemistry Staff

APPLETON, Wis.—The Institute of Paper Chemistry has appointed Dr. William Ward Pigman to the Organic Chemistry group. Born in Chicago, Dr. Pigman studied at George Washington University, Washington, D. C., receiving his Master's degree in 1933, and at the University of Maryland, from which he received his Doctor's degree in 1936. He also studied at the University of Leipzig in Germany in 1938-1939 under the auspices of the Lalor Foundation. From 1930 to 1937 he was a research assistant and from 1940 to 1944 a research chemist at the National Bureau of Standards, Washington, D. C., where he was engaged in a study of carbohydrates and their behavior with enzymes. For the last two years he has been a group leader in the Research Department of the Corn Products Refining Company, Argo, Ill. Dr. Pigman is co-editor, with Dr. M. L. Wolfrom of Ohio State University, of the series—Advances in Carbohydrate Chemistry, Volume Two of which will appear this year.

Southern Advance Holds Meeting

ATLANTIC CITY, N. J.—The Marlborough-Blenheim Hotel in Atlantic City, New Jersey was the scene of the annual general sales meeting of the Southern Advance Bag & Paper Company, Inc.

Cowles
NU-NAP
TRADE MARK REG.
FELT WASHING DETERGENT
Cowles NU-NAP contains a new combination of products and a brand new idea in detergent action. NU-NAP does an outstanding washing job on paper machine felts—both on and off the machine. NU-NAP will give extra life to your felts—it leaves them unusually clean—fluffy and absorbent.
Use NU-NAP for dependable—safe—free rinsing felt washing.
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THE COWLES DETERGENT COMPANY
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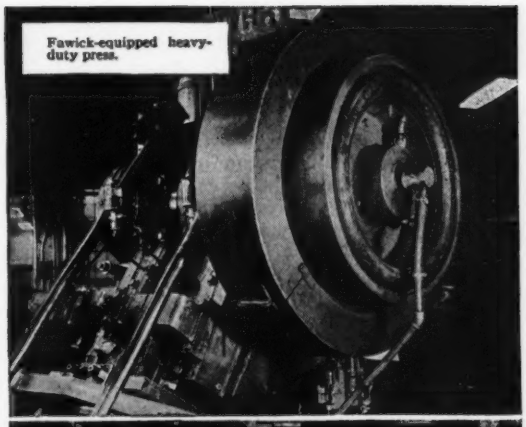
HOW WELL DO THEY WORK HOW MUCH DO THEY COST

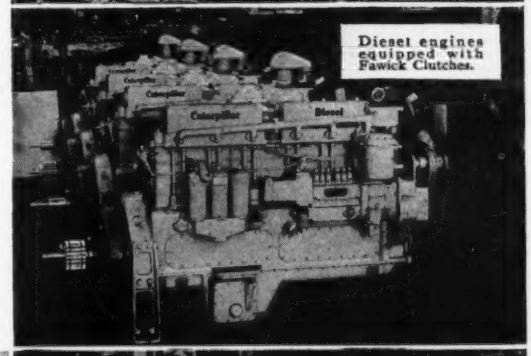
Both of these important questions about Clutches for heavy-duty drives are answered—*in your favor*—by Fawick Airflex Clutches.

1. They absorb shock and vibration, and transmit power, through a cushion of air—just like your car rides on its tires.
2. They have no moving parts to wear or get out of adjustment—no springs, toggles, arms or levers.
3. They require no lubrication—maintenance costs are low.
4. They provide uniform clutch engagement under all loads, at all speeds.
5. Performance and economy have been proved—on thousands of navy ships and on hundreds of types of industrial applications.

Let our Engineering Department give you details—on clutches, slip clutches, brakes, flexible couplings and power take-offs.

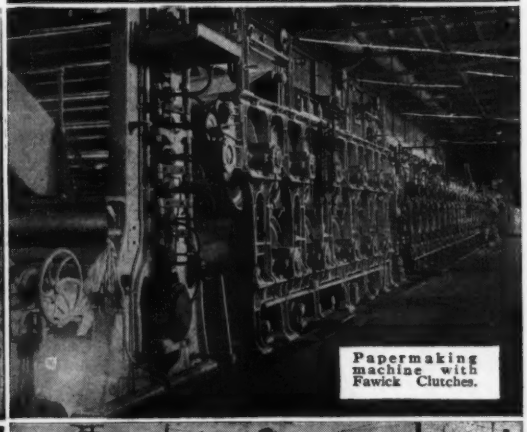


Fawick-equipped heavy-duty press.



Diesel engines equipped with Fawick Clutches.

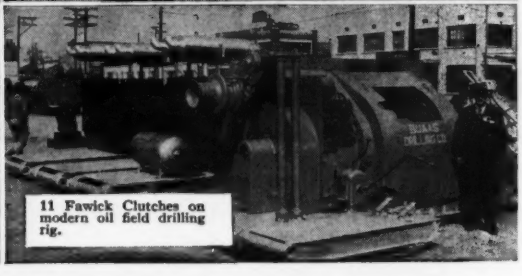
Fawick Clutches save time and money on big dredges.



Papermaking machine with Fawick Clutches.

Fawick-equipped logging crane.

How the FAWICK AIR-FLEX CLUTCH Works. Compressed air expands the rubber-and-fabric gland—to engage clutch with any degree of "grip" you want. Release the air and clutch disengages.



11 Fawick Clutches on modern oil field drilling rig.

FAWICK *Airflex* CLUTCH

FAWICK AIRFLEX CO., INC. - 9919 Clinton Road, Cleveland 11, Ohio

Betz Booklet Stresses Consulting Division

A new booklet explains the functions and method of operation of The Consulting Division of W. H. and L. D. Betz. Included in this booklet are seven architectural flow diagrams so chosen as to present a representative cross section of the various types of problems encountered and how these problems were solved in each particular case. These flow diagrams embrace plants for softening water for industrial use, for waste treatment, for sewage disposal and for pre-treatment of water for boiler purposes and others. Free upon request to W. H. and L. D. Betz, Philadelphia 24, Pa.

York Mill Changes Ownership

YORK, Pa.—The York Paper Manufacturing Company, Inc., has sold its mill at Rockburn to the Hellam Furniture Company, manufacturer of dining room and bedroom furniture in popular woods, of Hellam, Pa. The Hellam company intends to continue operating this mill as a paper mill.

Charles Observes Tenth Year

CHICAGO—The Charles Paper Company, Incorporated, last month observed it tenth anniversary. The Company, coarse paper distributors in this area, has its office and warehouse at 2363 Milwaukee Avenue.

Year after year the country's most efficient paper mills have depended upon Cincinnati Rubber Covered Rolls for outstanding operation.

Cincinnati's recognized advantages of holding the crown longer . . . uniform density . . . precision grinding and conformity to specifications are the reasons for this trust.

Depend upon Cincinnati for your next Roll Cover.

THE CINCINNATI RUBBER MFG. CO.
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Hercules Shifts Heads Of PMC Division

WILMINGTON, Del.—Six members of the Paper Makers Chemical Department of Hercules Powder Company have been appointed to new positions, effective May 1. Thomas G. Batchelor, resident manager of Hercules Powder Company (Canada) Ltd., Freeman, Ontario, will move to Wilmington, Del., as assistant director of sales of the department. He has been resident manager of the Hercules Canadian subsidiary since 1937, and was elected to the board of directors last September.

E. Hoke Martin, PMC sales representative at Kalamazoo, Michigan, will succeed Mr. Batchelor as resident manager of the Freeman plant.

Henry Reeves, Jr., now with the Paper Makers Chemical Department in Wilmington, becomes departmental sales representative at Kalamazoo, succeeding Mr. Martin.

Henry L. Mellen, formerly sales representative at Holyoke, Mass., has been appointed assistant manager at that location.

Thomas L. Stirling, with the Industrial Chemical Division of the Hercules PMC Department in New York City, will join the paper chemicals sales staff at Holyoke. He will be succeeded in New York by L. E. McKenzie, formerly resident manager of the Industrial Chemical Division's Boston, Mass., office.

Milton Harris Adds Three to Staff

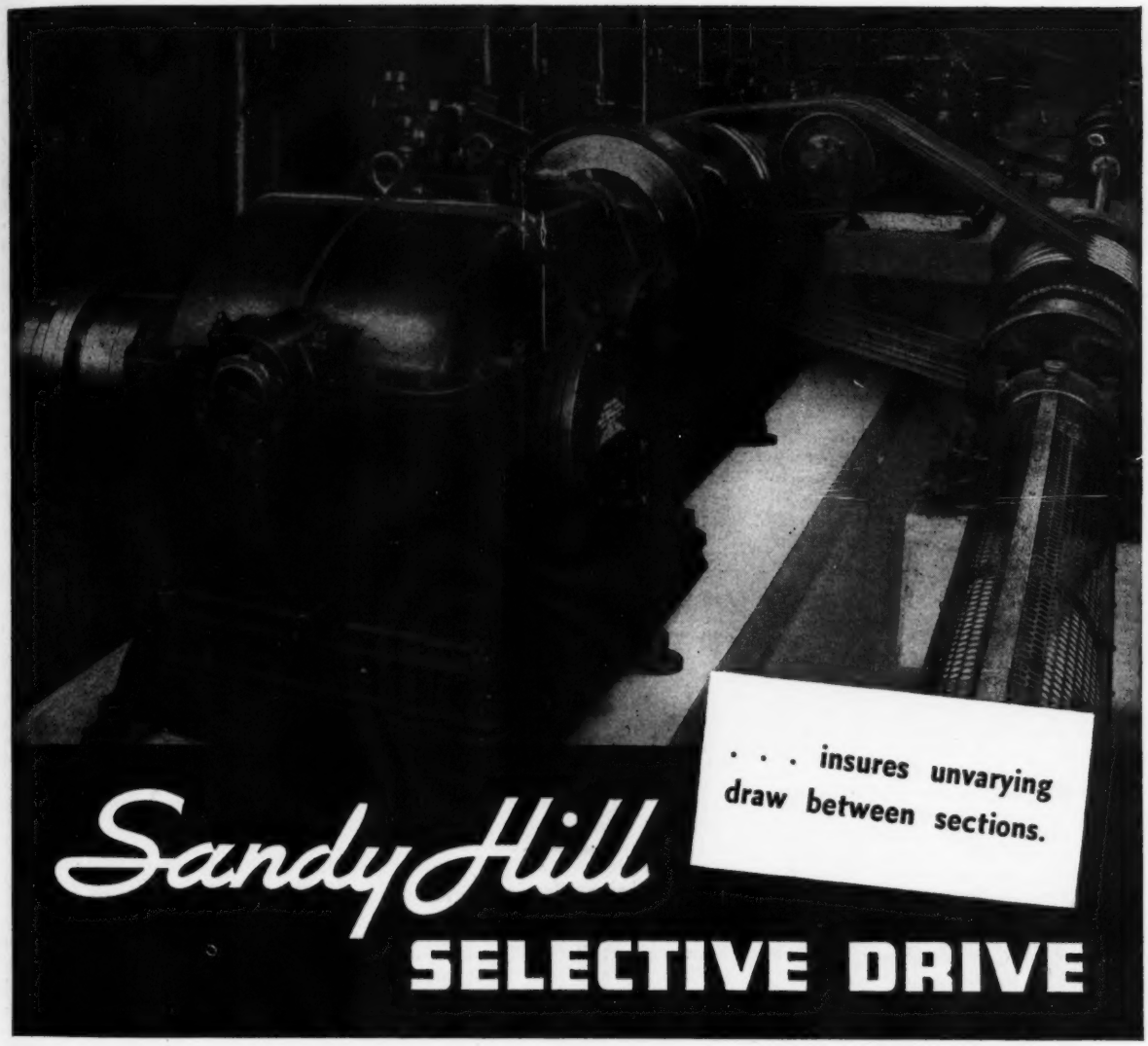
WASHINGTON, D. C. — Louis R. Mizell and Howard H. Brandt have become members of the staff of Milton Harris Associates. Mr. Mizell served three years as a lieutenant with the Navy and was formerly a chemist with the Textile Foundation. Mr. Brandt was a chemist with Sharples Chemical Company for eight years. As research associates of the organization, they are working on wool processes.

Louise L. Cox, formerly with the Navy Inspection Service, has joined the staff of Milton Harris Associates. She is technical librarian and assistant editor of the Interscience publication *Natural and Synthetic Fibers.*

Sprout-Waldron Develops Improved Rotary Refiner

MUNCY, Pa.—Sprout, Waldron and Company, manufacturer of industrial processing equipment, have developed an improved rotary disc refiner. It is a rugged, precision-built machine designed for especially tough assignments in the Pulp and Paper Industry.

An eight-page Bulletin, fully describes and illustrates with photographs and schematic drawings the wide field of application which this machine covers. Improved features and machine operation are interestingly discussed from the plant engineer's viewpoint.



Sandy Hill SELECTIVE DRIVE

. . . insures unvarying draw between sections.

Savings in belt costs through longer belt life.

Greatly reduced maintenance costs.

Requires no basement or mezzanine; saves floor space.

Saves cost of structural steel for supporting line shaft or cost or piers.

Permits installation of relatively smaller line shaft with anti-friction bearings for power savings.

Fine draw regulation, exact draw maintenance — those indispensable requirements of paper machine operators—are assured by this new achievement of Sandy Hill engineers. Combines simplicity of design with trouble-free operation, power-saving economy, safety and low first cost.

Unvarying draw between sections is provided through Sandy Hill's particular design involving effective use of V-belts and sheaves. There is no detectable slippage in the V-belt feature of the drive, and the speed regu-pitch V-belt sheaves is beyond the range of other mechanical combinations. Gives twice the draw range of the cone pulley and flat belt.

Sandy Hill Selective Drive can reduce operating costs for you. Write for circular showing drawings and explaining construction details.

THE SANDY HILL IRON & BRASS WORKS
HUDSON FALLS, N. Y.

OBITUARY

Charles Brewster Wheeler

WAYLAND, Mass. — Brigadier-General Charles Brewster Wheeler, 80, retired, ordnance chief of the AEF during World War I and a retired vice-president of the Eaton, Crane & Pike Paper Company of Pittsfield, died there recently after a lingering illness.

Highly decorated by this country, France and Britain for his wartime service, Gen. Wheeler resigned from the army to become a vice-president of Eaton in 1919. He retired in 1933.

Francis Hewitt Sherman

PALMER, Mass. — Francis Hewitt Sherman, 67, inventor and pioneer in the paper box business, died April 15 at the South Shore hospital, South Weymouth, after a long illness.

He was born in South Weymouth, September 14, 1878, and in 1911 he entered a partnership with J. W. Colgan and C. A. Scothcher in the founding of the S. C. S. Box Company which has been located at Thorndike for 19 years.

When organized the company started business in Bridgeport, Pa., later moving to the Bush Terminal building in New York City. In order to be nearer its source of paper board the company moved to Willimantic, Conn., in 1913. Outgrowing its quarters in 1926, the firm moved to Thorndike to occupy the Thorndike Company mill buildings in 1927.

Sherman served as vice-president and manager of the company and after coming here invented a new pulp egg carton which was sold in 1938 to the Self Locking Carton Company of Chicago, which located in another of the Thorndike mill buildings. Sherman transferred to the carton company at that time becoming manager of the local plant, a position he held until his death.

Norman K. Macdonald

MONTREAL, Que.—Norman K. Macdonald, president of the Major Paper Box and Wire Works Limited, of Montreal, has died in his 77th year, after a brief illness. He was a member of the Montreal Board of Trade and the Canadian Manufacturers Association, and served as a governor of the Montreal General Hospital and Children's Memorial Hospital.

He is survived by one daughter, Miss Isabel Macdonald, and a sister, Miss Margaret Macdonald, both of Montreal. His wife, formerly Miss Marion Smith, died eight years ago.

Witco Laboratory Is Also A Pilot Plant

CHICAGO — The Witco Chemical Company has recently made additions to its laboratory facilities in Chicago so that research ideas can put on overalls and go to work. They have doubled the space available for laboratory use as a means of bridging the difference that exists between "the glass and eye dropper" conditions of a laboratory and the "steel and carload" problems of production. Executives faced with the problem of turning test tube results into manufacturing realities will be interested in their approach to the simplification and speed-up of product development.

As a producer of chemicals, pigments and asphaltums, Witco has long been aware of the value of close laboratory-plant cooperation. Their new brick and steel laboratory structure, built to further that element, provides upwards of 3200 square feet of floor space, and more than doubles their previously existing laboratory facilities.

Plummer Joins Plastic Corp. As Production Manager

MORRISTOWN, N. J.—Thomas Francis Plummer has been made production manager for International Plastic Corporation—makers of Filmonize and Taypit Self-Sealing Tapes. A West Point graduate, Mr. Plummer served in the Army until his retirement in 1928— at which time he joined Certain-teed Products Company. In 1930, he entered the employ of DuPont Cellophane Company serving as departmental and plant manager in various of their divisions until 1945, when he became plant manager of the H. B. Catty Corporation, Norwalk, Conn.

Restigouche Mill Improvements To Be Started in Spring

CAMPBELLTON, N. B.—Work on extensions and improvements to the sulphite pulp mill of the Restigouche Company Limited will be put under way this spring and will cost an estimated $1,500,000. The project, which will be one of the largest post-war industrial developments in the province, will get under way as soon as materials are available.

The extensions, it is understood, will include the addition of three new steam turbines which will generate 2,000 k.w.t., the result of which will be the production of much higher grade of both bleached sulphite and rayon pulp. The program is said also to include the erection of a large modern office building, a new chemical mixing plant and an extension to the laboratory building. The mill has a present capacity of 400,000 lbs. per day of high grade bleached sulphite pulp and rayon pulp.

Twecotong Feature Bakelite Insulation

A complete new line of manual arc welding electrode holders to be known as Twecotong has just been designed by the Tweco Products Company, Wichita 1, Kan. The new line includes full-insulated and semi-insulated models.

Twecotong is a conventional tong type holder; however, it features almost indestructible molded-laminated glass cloth Bakelite insulation keyed to the holder casting. Tensioning spring firmly seats on fibre upset washers and is protected from spatter by non-binding Neoprene tubing. Well ventilated fibre handle, together with good cable connection, assures a cool running holder. All parts are replaceable.

Bowmall Heads Paper Group For Russian Relief Drive

L. W. Bowmall of Bowmall & Co., pulp paper, has been made chairman of the Paper Division in the $4,000,000 Commerce and Industry drive which has been launched in greater New York by the American Society for Russian Relief.

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Westinghouse Publishes Guide to Electronics

"The Business Man's Guide to Electronics," published by the Westinghouse Electric Corporation, explains the six fundamental functions of electronic tubes, rectifying, amplifying, generating, controlling, counting and sorting, and inspecting, and describes the tubes required for each function. Among the applications described in this 28-page illustrated booklet are induction and dielectric heating for tin plating and brazing; molding and curing plywood and heating rayon cord; electronic control for welding electronic regulators for mixing and packaging; power conversion in mills, mines, factories and railroads; safety devices using photoelectric tubes; measuring and inspecting with such devices as the mass spectrometer, Dynetric balancer and the Electrigage.

Blake, Moffitt & Towne Promotes Joseph Thiery

San Francisco — Appointment of Joseph H. Thiery to the position of Regional Sales Manager has just been announced by Blake, Moffitt & Towne. In his new position, Thiery will coordinate and supervise the sales of the Company's Oakland, Sacramento, Fresno, San Jose, and Stockton divisions, with his office at the San Francisco headquarters. He replaces Roy M. Tucker, who has resigned to accept a position as head of the selling activities of a large frozen food concern located in Stockton.

Thiery came to the Oakland division of Blake, Moffitt and Towne some twenty years ago, working first as a truck driver and later as Warehouse Superintendent, an experience which well qualified him to enter upon his career in selling. His success in this field led to his appointment in 1945 as Sales Manager of the Wrapping Paper Department of the Oakland Division.

Succeeding Thiery as Wrapping Paper Sales Manager is Jack Kronenberg, who came to Blake, Moffitt & Towne in 1930. In commenting on these changes, J. L. O'Connell, Oakland Division Manager, had this to say, "While we regret losing the full time services of Joe Thiery in our Oakland organization, we are happy that he was selected for promotion to the headquarters division as Regional Sales Manager, and he has our every good wish for continued success. At this time, we are fortunate in being able to call upon the services of Jack Kronenberg, who has had a long and practical experience in the paper business, including an outstanding sales record for a period of over twelve years. The change affects our Wrapping Paper Department only, as there are no changes contemplated at this time in our Printing Paper Department, which continues under the direction of Claude M. Christie, Sales Manager.

Announcement of these appointments marked the occasion of a luncheon attended by the Company's Northern California Managers on Friday, April 12. Unable to attend, because of his extended vacation trip to South America, was O. W. Mielke, General Manager, whose greetings by wire from Mexico City were read by Arthur W. Towne, Vice President and San Francisco Manager, who presided over the meeting.

Massengale Joins Dicalite

Chicago—Robert L. Massengale has joined The Dicalite Company as engineer in the paper products division. His headquarters will be in the Chicago office of the company. Born and educated in Georgia, Mr. Massengale's practical experience in paper making has been gained in some of the South's largest mills.

Wisconsin High Schools Plant Forest Tracts

Merrill, Wis.—A number of new school forests, which have been carefully cruised and mapped, will get off to a tree planting start this spring, under the auspices of Trees for Tomorrow, Inc. On May 3rd, the Tomahawk high school dedicated and planted twenty thousand trees on a new 520 acre forest, second largest school forest in the state. Minocqua high school dedicated a new 240 acre tract on May 5th.

An interesting sidelight was discovered in the management plan drawn up for the Minocqua forest when it was found that four hundred dollars worth of mature poplar should be removed as the first step in a long-range forestry program. Minocqua high school students helped cruise the forest. Regular timber sale bids were let, which included provisions for the selective operations. The school, now enriched by the four hundred dollars, will spend this fund to develop the tract, both as a recreational area and a demonstration center where scientific forestry methods can be carried out.

Pacific Mills Promotes Locke

Ocean Falls, B. C.—Pacific Mills Limited has William E. Locke as assistant resident manager of their mill at Ocean Falls. After the completion of his primary education in Victoria, Mr. Locke entered the University of British Columbia, and graduated with a degree in Mechanical Engineering in 1930. Mr. Locke entered the employment of Pacific Mills in 1934, and in 1940 was promoted to the position of plant engineer. In 1945 he was appointed resident engineer, which position he has held until today's announcement.

Container Laboratories Sets Compression Test Standards

The Container Testing Laboratories, New York City, has prepared a complete and detailed set of compression tests standards for corrugated fibreboard boxes. These standards are based on the results of tests made over a period of several years on boxes from a wide cross-section of the industry and covering a wide range of sizes, shapes, flutes and materials. These standards are contained in a set of graphs, charts and tables which show the appropriate correction to be applied for each of the several variables and combinations of variables of construction and materials. It is impractical and unnecessary from the Laboratories' standpoint to attempt to reduce these data to a single table or chart. However, in order to provide manufacturers and users of these containers with some guide for the purpose of evaluating container rigidity, the Laboratories have prepared a set of relatively simple formulas which will give a fairly close approximation of the expected compression load for boxes made of minimum strength materials.

These formulas should be applied only to boxes which have been exposed to an atmosphere of 65% Relative Humidity and 70° F. prior to testing.

Top-to-Bottom Loads

For boxes having top perimeter of 25 to 65 inches, multiply perimeter in inches by 8 and add 265.

For boxes having top perimeter of 66 to 100 inches, multiply perimeter in inches by 5 and add 465.

End-to-End Loads

For boxes having end perimeter of 26 to 49 inches, multiply perimeter in inches by 12.

For boxes having end perimeter of 50 to 69 inches, multiply perimeter in inches by 6 and add 290.

For boxes having end perimeter of 70 to 100 inches, multiply perimeter in inches by 3 and add 480.

These formulas are for A-flute corrugations. For boxes with B-flute corugations use same formulas and multiply resultant top load by .80 and end load by 1.20. For C-flute multiply top load by .90 and end load by 1.10.

It is to be emphasized that these formulas should not be applied to boxes in which the depth is greater than the length or in which the depth is more than one and one-half times or less than two-thirds the width. The standards for such boxes or for boxes with 275 or 350 pound certificates require the use of correction factors. The Container Testing Laboratories will be glad to furnish the corrected standard for any specific box upon request.

Taggart Installs Jones Refiner

Pittsfield, Mass.—E. D. Jones & Sons Company, is installing a special Leviathan Refiner (driven by a 700-H.P. Motor) in the mill of Taggart Corporation, Oswego, N. Y.

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PAPER TRADE JOURNAL

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W. L. Cook, Editor

SURFACE, NOT BULK

Comes now a sizable block of the paper industry's largest customers to offer its help to mills that cannot seem to catch up with demand so long as that demand grows faster than does the increasing tonnage of the production figures. The proffered aid is double-barrelled in its potential effect because while with one hand the customer is extending a willingness to help make the available tonnage go further, with the other hand he is pointing to a reminder of the difference in standards of measurement that sometimes make statistics confusing. In extension of this though he points out that the printer is interested, not in tonnage, but in area of printing surface. To get what he wants most, therefore, he proposes that the tonnage be spread out thinner, literally, and that his own customers be persuaded to refrain from increasing weights asked for until the paper industry shall have caught up with the demands that are made upon it.

Measured by tonnage the accomplishment of the paper industry has been nothing less than impressive. Production figures for recent weeks have run consistently above the hundred percent of capacity figure, which represents a good deal of double-time for labor. But an increase of ten percent in output, at the top of the capacity scale, means less than an advance on the requirements of a market that, by changing its specifications from a 40-pound to a 50-pound paper can jump its demand by 25 per cent.

This is a phenomenon that no one understands more clearly than the man who handles paper. And he is quick to put his finger on a remedy that may prove helpful to his condition when the paper mill cannot increase its tonnage further, nor offer any immediate prospect for early increase of the supply. The printer, after all, is more interested in the amount of printing surface available than in the gross weight of paper manufactured. This point of view is accented by action of the three industries which use the bulk of the nation's book, groundwood, and fine paper and in their promise to cooperate in a voluntary effort to reduce the weights of paper used in printing.

In a statement to all of their members, the National Publishers Association, representing the nation's magazine publishers; Printing Industry of America, Inc., representing the nation's commercial printers; and the American Book Publishers Council have urged that paper usage be restricted to those weights manufactured under the former WPB order L-120 schedules I to XIV, June 5, 1944 (as amended) which order limited the weights of paper that paper mills could produce. Says the statement:

All users of the printing grades of paper have been severely handicapped because supply is not equal to demand. During the past two months representatives of the magazine, book, and commercial printing industries have diligently studied the problem and sought means of increasing paper production.

The American Paper and Pulp Association, representing the paper manufacturing industry, has sought to cooperate with us. There has, in fact, been a substantial increase in paper production since the first of the year. The Department of Commerce has reported an increase of 94,000 tons during March as compared with February of this year. According to the American Paper and Pulp Association, production of all types of paper, printing as well as nonprinting grades, is now 105 per cent of the theoretical rated capacity of the industry. Nevertheless, the demand for paper has so increased that the shortage seems to be growing more acute.

The problem arises from the fact that there is simply not enough paper manufacturing capacity in the United States to supply our vastly expanded civilian economy. Paper making equipment is custom built and takes a year or more to construct and install. It seems to us, after a thorough study of the problem, that the shortage may continue indefinitely.

Our three associations have together explored every possibility for an increase in paper production sufficient to satisfy our requirements. We have concluded that the possibilities are not great, and that conservation steps must be taken at once.

As publishers and printers, we are more interested in the amount of printing surface available than in the gross weight of paper manufactured. During the war, the weights of paper were controlled under WPB order L-120. Under this regulation a substantial increase in paper surface relative to the total weight of paper manufactured was achieved. It was the most important single factor in enabling the printing and publishing industries to maintain production.

WPB order L-120 was designed primarily to conserve pulp. The paper industry has told us that there is no immediate crisis in the supply of pulp and the Office of Price Administration has also raised the ceiling prices of pulp in order to insure the maintenance of production.

However, we have had complaints from some of our members that when they have requested certain

Calendar of Coming Events

June 17-20, 1946.—American Pulp and Paper Mill Superintendents Association, Annual Convention, Poland Springs, Me.

lighter weight papers, they have been notified by mills that these have been discontinued in favor of heavier papers. It is the belief of the paper-consuming industries that if the weights of paper increase progressively, as seems to be happening, we will get a false picture of the amount of paper available. Unless the weights can be held down, the same amount of pulp will result in less printing surface. Actions of this sort will cancel out the gains in total tonnage as reported by the paper industry and reduce the yardage available for printing. However, if and when the users have evidence that there is no longer a severe shortage of printing surface, it will be to their interest to encourage the production of heavier types of paper.

The decision to conduct a voluntary campaign to reduce the weights of paper being used was thoroughly discussed with officials of the American Paper and Pulp Association. It was recognized that the reimposition of government controls at this time would be inopportune.

This voluntary program is also in accordance with a suggestion made on April 2 by the National Paper Trade Association, representing the paper merchants.

We are therefore calling upon all commercial printers, book publishers and magazine publishers to reduce voluntarily the weights of paper which they are ordering and use only those weights permitted under wartime regulation L-120, schedules I to XIV, June 5, 1944 as amended. Printers and publishers are advised to tell their customers that as a measure of conservation the heavier weights of paper will not be made available until there is a general improvement in paper production.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1946		Corresponding Weeks—1945	
March 16	104.1	March 17	89.4
March 23	105.0	March 24	92.1
March 30	104.9	March 31	88.9
April 6	104.1	April 7	86.8
April 13	103.6	April 14	87.4
April 20	*102.5*	April 21	90.7

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1945	86.7	89.4	90.2	88.1	89.8	91.2	80.8	88.6	90.2	95.9	95.5	91.0	89.7
1946	94.7	98.4	*104.4*										

COMPARATIVE YEARLY SUMMARIES

	1939	1940	1941	1942	1943	1944	1945	1946
Year to Date	80.0	85.1	90.4	102.9	88.8	88.1	88.4	*99.7*
Year Average	83.4	85.6	97.4	90.4	87.8	88.1	89.7	

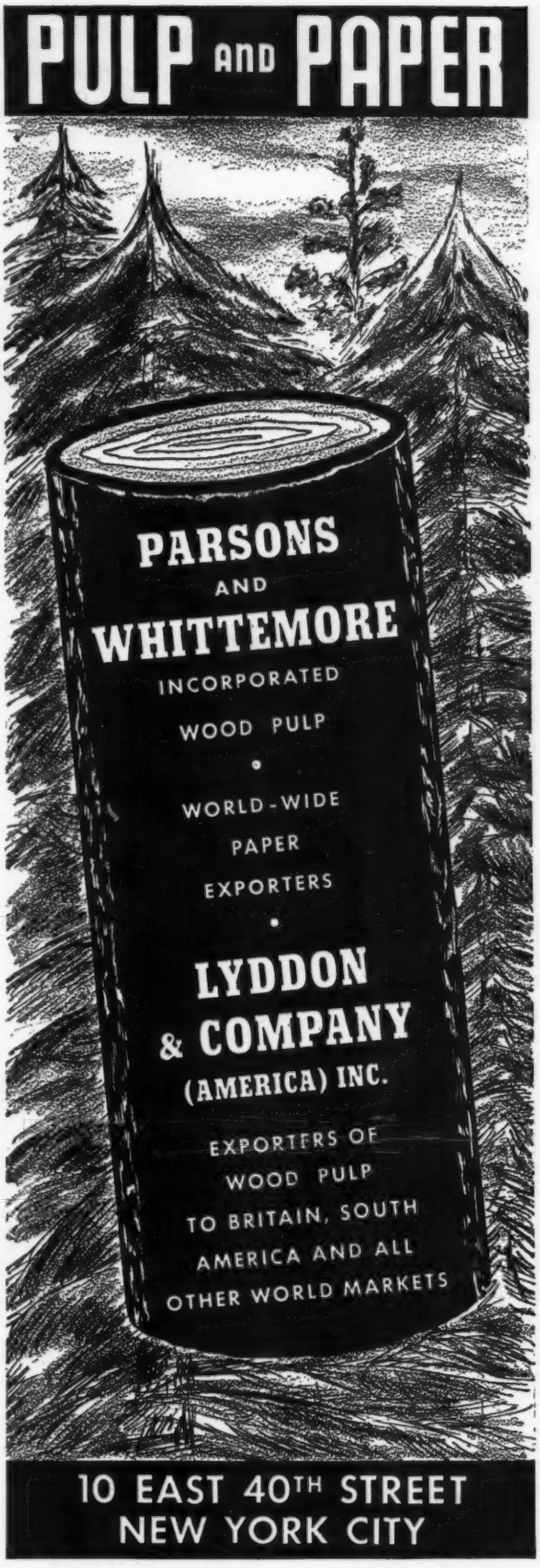
*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Current Weeks—1946		Corresponding Weeks—1945	
March 16	100	March 17	95
March 23	99	March 24	99
March 30	100	March 31	100
April 6	99	April 7	92
April 13	101	April 14	97
April 20	*101*	April 21	98

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1945	91	95	97	97	96	96	86	90	91	97	95	85	93
1946	90	97	*100*										

†Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.



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Edited by R. G. Macdonald, Secretary

Production and Fuel Rates of Rotary Kilns Burning Lime Sludge*

By Ralph Gibbs[1]

Abstract

The importance of controlled combustion in any rotary kiln operation is pointed out.

Starting with production and fuel rates of well-operated dry-feed rotary lime kilns as a basis for the thermal analyses, a specific size of rotary kiln is investigated. From the mathematical and graphic data presented, the performance of the kiln is studied, with dry and with wet feed, and the production and fuel rates that may be anticipated under various conditions of operation are derived.

Many operators of rotary kiln lime-reburning plants in paper mills have little idea of the maximum production possibilities of their kilns and probably know still less concerning the best possible fuel rate they can expect in their lime burning operation.

When everything is considered, there really is no occasion for wonder that such a condition exists. In

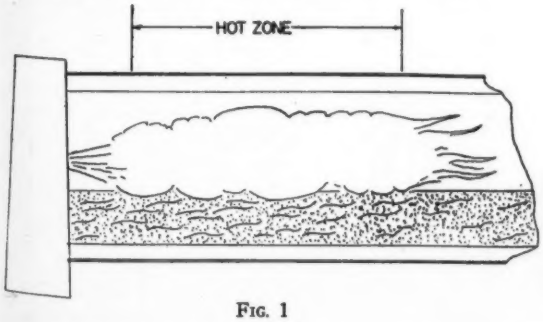


FIG. 1

the first place, the reburning of paper mill lime sludge in rotary kilns is a comparatively recent innovation, thus the opportunity for acquiring wide experience is lacking. In the second place, not all rotary kiln lime reburning operations receive the technical attention they merit. In the third place, the operating technicians are still acquiring practical experience from a "cold" start. Without benefit of previous experience, they are feeling their way. Furthermore, technical literature on rotary kilns is almost nonexistent.

Paramount in importance to proper rotary kiln operation, and which cannot be stressed too much, is the necessity for conducting the combustion process in the most efficient manner possible.

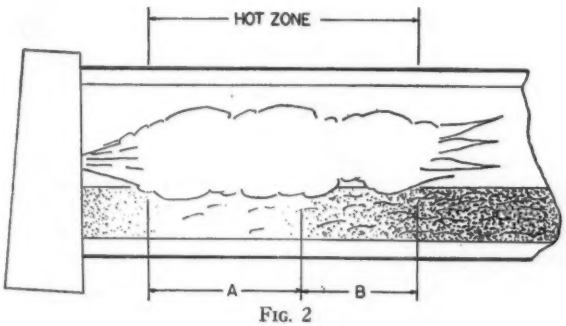


FIG. 2

Controlled Combustion

Controlled combustion consists essentially of firing just sufficient fuel to perform the required duty without great excess either of air or fuel.

Suitable instruments are available for analyzing the kiln gases, and thereby the combustion process itself can be controlled very closely.

The establishment of the proper time rate of firing the fuel can be fixed only by experience and close attention to details. This item is of sufficient importance to warrant some further description.

As the material being processed travels through the kiln, it passes through various stages of physical and chemical condition depending mainly upon the temperatures prevailing in the different so-called "zones" of the kiln. After the sludge is introduced into the kiln, it is heated and dried. After it is dried, its temperature is raised to a point where dissociation of the calcium carbonate occurs.

It seems that a minimum of 80% available calcium oxide in the finished lime is desirable.

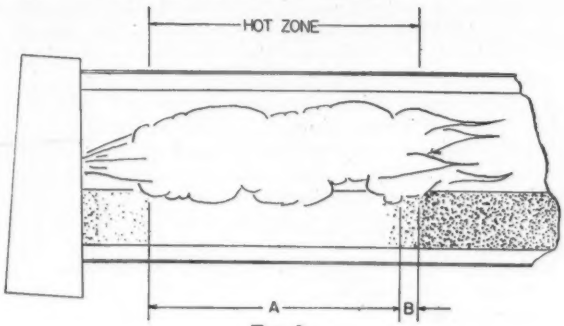


FIG. 3

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Consulting Chemical Engineer, York, Pa.

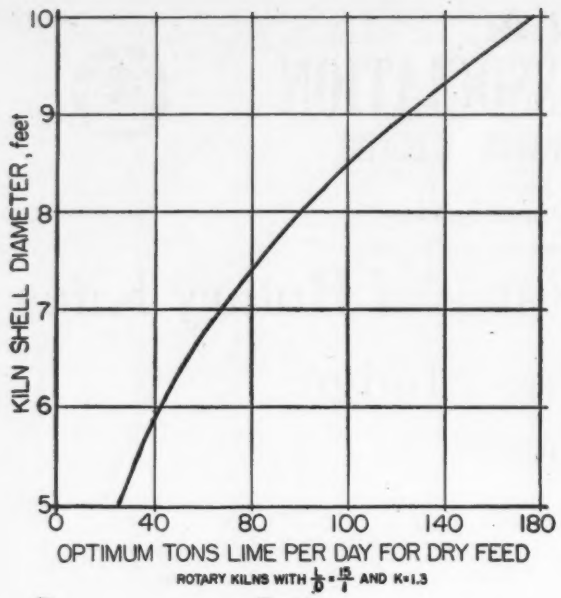


FIG. 4

Generally, the degree to which the lime in the sludge becomes available depends upon the time and the temperature of the calcining process. In order to bring about the desired degree of calcination in a practical period of time, the lime is superheated by some 900 to 1100°F., so that its temperature, as it passes through the hot zone of the kiln, will reach 2500 to 2700°F.

It is during its passage through this hottest zone of the kiln that the degree of "finish" of the lime is attained. The experienced kiln operator can judge very closely the degree of finish by the appearance of the material as it is seen in the hot or finishing zone. In most instances where a good quality of lime is desired, if the material in the full length of the hot zone has a dark, hazy appearance compared to the walls of the kiln, it is under-finished. The available calcium oxide will probably be 60 to 75%. Figure 1 illustrates this description. If the lime has the color appearance near to that of the kiln wall throughout the length of the hot zone, the lime can be termed over-finished. It is true it will have a high available calcium oxide content, especially the larger particles, possibly approaching very close to the limit. On the other hand, the price for this kind of lime is high in terms of fuel and frequently the slaking properties are impaired. Figure 3 shows this condition. Somewhere between these limits a satisfactory lime is produced; Fig. 2 illustrates a condition that will generally produce a satisfactory quality of lime.

The point to be stressed, however, is the necessity for establishing the optimum position of the transition point in the hot zone, the point where the dark material almost flashes to the appearance of the kiln wall. Normally this point can extend well into the hot zone with the production of a good quality lime. By the tedious process of trial and error, the optimum rate of firing fuel will eventually be established. The time and effort spent in so doing will be well repaid. When this has been done, and by closely regulating the air for combustion, a condition approaching controlled combustion will be attained.

In the following discussion, controlled combustion is presumed.

Optimum Production Rates for Rotary Kilns

As a basis for developing optimum production rates for rotary kilns burning lime sludges, it appears advisable to use the wide experience and knowledge that have accumulated during the more extended use of the dry-feed rotary lime kiln.

DRY FEED KILNS

In previous articles *(1, 2)* the writer presented an empirical relation for the optimum production rates of dry feed rotary kilns that gives results conforming very closely to those found in practice. This empirical relation is:—

$$T = \frac{k D^3 L}{100} \qquad (1)$$

Where: k = a coefficient of value depending upon the kind of material processed and the kiln practice followed.
T = tons of material produced per day.
D = diameter of the kiln shell, feet.
L = overall length of the kiln shell, feet.

It is common practice with kiln designers to proportion their kilns such that the ratio of length to diameter is between 15 and 20 to 1. Using a ratio of 15/1, which has been very common practice, equation 1 then becomes:—

$$T = \frac{15 k D^3}{100} = 0.15\ k\ D^3 \qquad (2)$$

Good kiln operating practice in burning dry feed limestone to good quality lime frequently results in the value of k being as high as 1.5. A safe, practical figure will be 1.3, so that:—

$$T = 0.195\ D^3 \qquad (3)$$

Figure 4 shows the relations of equation 3 for various sizes of rotary kilns.

The conditions generally attending such an operation are:—

Exit kiln gas temperature	1500 to 1800° F.
Temperature of lime from kiln....	2100 to 2300° F.

The kiln shell heat loss *(3)* is approximated by:—

$$S = \frac{4340}{k D} = \frac{4340}{1.3 D} = \frac{3330}{D} = \text{B.t.u./lb. of lime produced} \qquad (4)$$

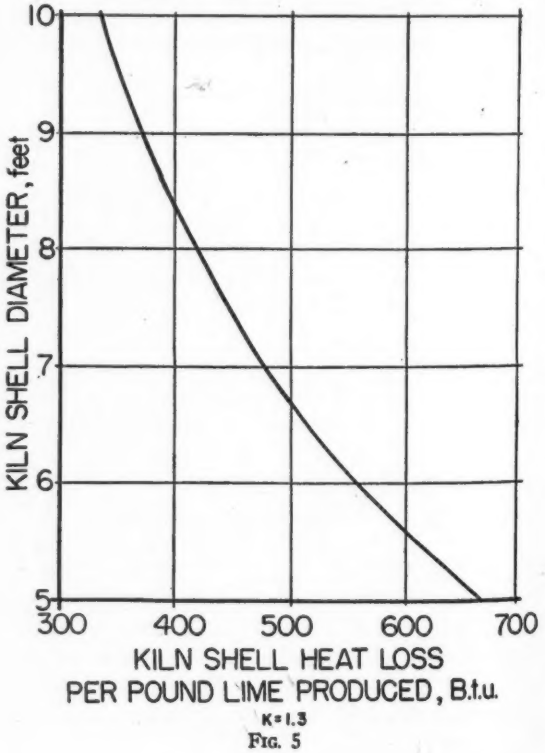


FIG. 5

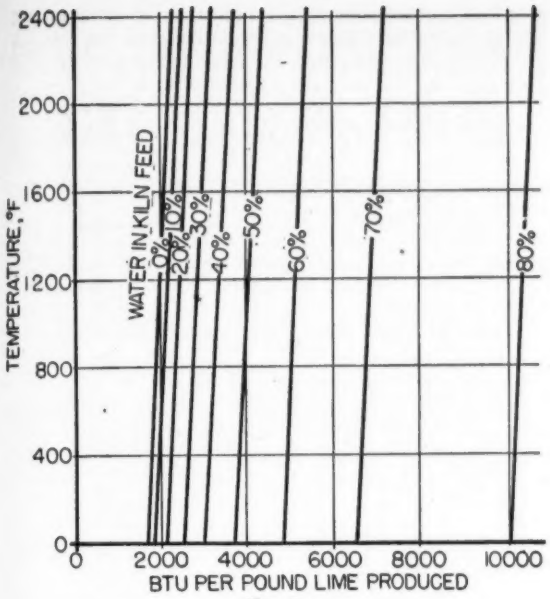


FIG. 6

Heat Required to Calcine and Superheat Lime

These relations are shown in Figure 5.

The total heat requirement for burning lime in a dry-feed rotary kiln can now best be examined by assuming a specific size of kiln. To this end, assume the kiln to be 8 feet in diameter by 120 feet long, fired with bunker C (No. 6) oil. The exit gas temperature is 1800°F. and the lime is discharged from the kiln at 2200°F.

From Figure 6 it is seen that the heat required to calcine the limestone and discharge the lime at 2200°F., is approximately 2200 B.t.u./lb. of lime produced.

From Figure 5, it will be observed that the kiln shell heat loss is close to 420 B.t.u./lb. of lime produced.

With the help of Figure 7, and by the method of trial and error, the heat lost in the kiln gases at 1800°F. is found to be about 1450 B.t.u./lb. of lime.

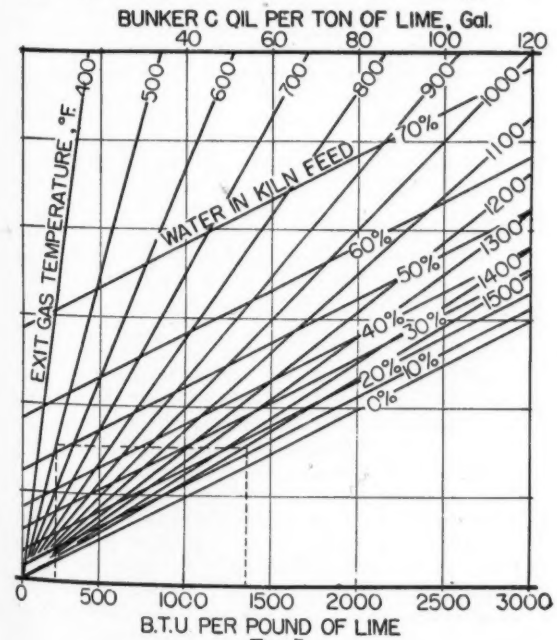


FIG. 7

Heat above 300°F. Lost in Exit Kiln Gas

The total heat utilization, therefore, is as shown below.

Heat to calcine and discharge lime at 2200° F...	2200 B.t.u./lb.
Kiln shell heat loss	420 B.t.u./lb.
Exit kiln gas heat loss (1800° F.—54 GPT Oil)	1450 B.t.u./lb.
Total	4070 B.t.u./lb.

Equivalent to 8,140,000 B.t.u./ton of lime or 54 gallons of bunker C oil (150,000 B.t.u./gal.) per ton of lime.

From Figure 4 it is seen that the production rate of this kiln so operating will be about 100 tons of lime per day, or 4.17 tons per hour. Thus the time-rate of heat input into the kiln is:—

$$4.17 \times 8{,}140{,}000 = 33{,}900{,}000 \text{ B.t.u./hour.}$$

It is now possible to determine how this same kiln would operate with wet instead of dry feed.

Wet-Feed Kilns

Now turning to a wet or sludge feed instead of dry feed in the kiln as described above, and with the same time-rate of firing fuel, some approximations can be derived as to the possible production and fuel rates that can result.

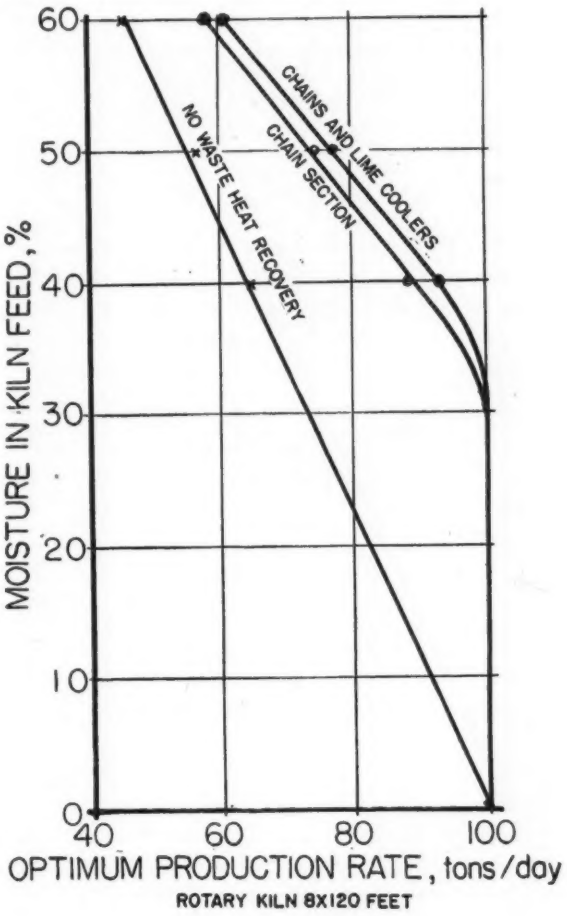


FIG. 8

Table I conveniently shows the assumed conditions attending.

TABLE I

Moisture in Feed and Kiln Arrangement	Exit Gas Temperature, °F.	Discharge Lime Temperature, °F.
60% water No heat exchangers in feed end No lime coolers	1100	2200
50% water No heat exchangers in feed end No lime coolers	1200	2200

40% water No heat exchangers in feed end No lime coolers	1300	2200
60% water Heat exchangers in feed end No lime coolers	600	2200
50% water Heat exchangers in feed end No lime coolers	600	2200
40% water Heat exchangers in feed end No lime coolers	600	2200
60% water Heat exchangers in feed end Lime coolers	600	300
50% water Heat exchangers in feed end Lime coolers	600	300
40% water Heat exchangers in feed end Lime coolers	600	300

A specimen computation will illustrate the derivation of the data used in developing Figure 8.

From Figure 6 it is seen that with 60% water in the kiln feed, the heat required to dry and calcine the sludge is about 5300 B.t.u./lb. of product. It is not known, what the production rate will be, nor is it known what to expect for the fuel-lime ratio. However, it is possible to assume or choose some reasonable values for the production coefficient k, and the fuel-lime ratio. To this end, assume k equal to 1.0 and the fuel requirement as 80 gallons per ton.

The trial computation will result as follows:—

Heat to dry and calcine	5300 B.t.u./lb.
Kiln shell heat loss (k = 1.0)	540 B.t.u./lb.
Exit gas loss (80 gal./ton—1100° F.)	2200 B.t.u./lb.
Total	8040 B.t.u./lb.

Equivalent to 16,080,000 B.t.u./ton or 107 gal./ton of oil.

Since the heat requirement will be 16,080,000 B.t.u./ton, and there is allowed only 33,900,000 B.t.u./hour (dry-feed kiln) then the production rate will be:—

$$\frac{33,900,000}{16,080,000} = 2.1 \text{ tons per hour, and } k \text{ will be } 0.66$$

It will be noted that the original choice of k value and fuel requirement were quite far from satisfactory. The k value was too high and the fuel too low. A second trial computation is made using a k of 0.59 and fuel at 120 gal./ton. There now is:—

Heat to dry and calcine	5300 B.t.u./lb.
Kiln shell heat loss (k = 0.59)	920 B.t.u./lb.
Exit gas loss (120 gal./ton—1100° F.)	2750 B.t.u./lb.
Total	8970 B.t.u./lb.

Equivalent to 17,940,000 B.t.u./ton of lime or 120 gal./ton oil.

The production rate will be:

$$\frac{33,900,000}{17,940,000} = 1.89 \text{ tons lime per hour, or 45 tons/day.}$$

At this production rate, the coefficient k is 0.59. Thus a heat balance is obtained that checks rather well.

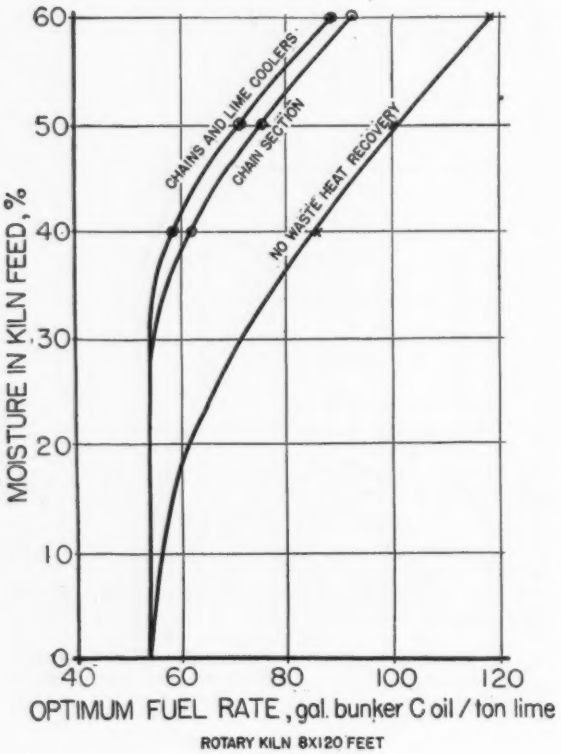
Performing the same operation for the other conditions set down in Table I, the data are derived for plotting the curves in Fig. 8.

From Fig. 8, the production rate for an 8 feet in diameter by 120 feet long kiln, operating under various conditions of moisture in the feed, and with heat exchange devices or without, can be closely approximated. The benefits of heat exchange equipment in upping the production rates is readily seen. The cost, in loss of production, of superfluous water in the feed is apparent.

In making the computations for the production rate, the fuel rate also is involved. The fuel rate relations are shown in Fig. 9.

The effects of excessive moisture on the fuel costs is well shown while the benefits that can be anticipated from the use heat exchange equipment are readily apparent.

It will be an arduous task to develop a chart covering all the sizes of kilns in operation today. Until this has been done, it is hoped the material here presented will enable those interested to analyze their individual problem.



ROTARY KILN 8X120 FEET

Fig. 9

Literature Cited

1. Gibbs, Ralph, *Rock Products*, p. 58 (Nov., 1942).
2. Gibbs, Ralph, *Chem. Met. Eng.* (April, 1944).
3. Gibbs, Ralph, *Tech. Assoc. Papers* 28: 134 (June, 1945).

TAPPI Notes

The TAPPI New England Section will meet at the Weldon Hotel, Greenfield, Mass., on May 17 and 18. On Friday afternoon, May 17, there will be visits to the Erving Paper Mills, Esleeck Manufacturing Company and the Millers Falls Paper Company. Following the dinner at 6:30 p.m. Herbert R. Mauersberger, technical editor of the Rayon Textile Monthly will discuss "Fibers Made to Order—Synthetic or Man Made, Especially Those of Interest to Papermakers." On Saturday morning Donald H. Powers, Director of Textile Development, Monsanto Chemical Company, will talk on "Identification and Removal of Synthetic Finishes from Cotton Rags" and William Bendz of the Westinghouse Electric & Manufacturing Company, will present a paper on "The Application of Electronics to the Paper Industry." On Saturday afternoon there will be a golf tournament and a dinner-dance in the evening.

The Western New York Group of the TAPPI Empire State Section will meet at the Prospect House, Niagara Falls, N. Y., on May 8, 1946 at 6 p.m. F. O. Sundstrom of the Heller & Merz Department, Calco Chemical Division, American Cyanamid Company, will talk on "The Influence of Rosin Size on Acid Colors." A motion picture entitled "Progress of an Industry" will be shown.

The Measurement of Tone Reproduction of Half-tone Prints and Uniformity of Solid Prints*

By R. Buchdahl[1], M. F. Polglase[2] and H. C. Schwalbe[3]

Abstract

The study of the relationship between paper and ink properties and the quality of the print requires objective methods to measure each of the variables under consideration. This paper presents two methods which permit satisfactory numerical evaluations of two of the individual qualities of a print, namely the tone reproduction in the half-tone print and the uniformity in the solid print.

The measurement of tone reproduction quality is based on the assumption that the tone values of an ideal print are identical to the tone values predicted by the printing plate. The actual tone values, expressed as densities, are obtained from the spectrophotometric measurements of brightness. Ideal densities are calculated from the print and nonprint areas of the printing plate, and the brightnesses of the unprinted paper and the solid print. The deviation of the actual tone values from the theoretical tone values has been used as the objective measure of tone reproduction. A comparison of this objective measurement with the subjective evaluation of tone reproduction resulted in satisfactory agreement.

The uniformity of a solid print is the evenness of the density of the ink film over the total area of the solid. An objective evaluation involves the measurement of brightness and brightness differences of the print. This has been accomplished by photographing the solid and measuring the density values across the negative. The objective parameter, for uniformity, includes the average deviation in density and a measure of the distribution of the density values. This value is shown to agree with the subjective evaluations of uniformity made by several qualified observers.

Since 1942 the laboratories of the Sun Chemical Corporation and The Mead Corporation have been engaged in a joint research project to study the interaction of coated papers with printing inks in the hope that a better and more fundamental understanding of the relationships between the various paper and ink properties and print quality might eventually lead to the development of improved products for the graphic arts. It was soon recognized that a study of print quality as a function of paper and ink properties required objective methods to measure quantitatively the quality of a print and the various paper and ink properties.

Overall print quality is a composite of several individual print properties. The observer combines judgments of these individual print qualities, using different "weight" factors* for the various properties, to obtain the overall quality of any print. In black and white reproductions, it is necessary to distinguish between the following individual print properties:

* The importance of these weight factors in judging the overall quality of a print is considerable. Disagreements between various observers can be traced in many cases to the use of different weight factors. A careful investigation of this problem, taking into consideration the various viewpoints of the paper maker, the ink maker, and the printer, would be most desirable.

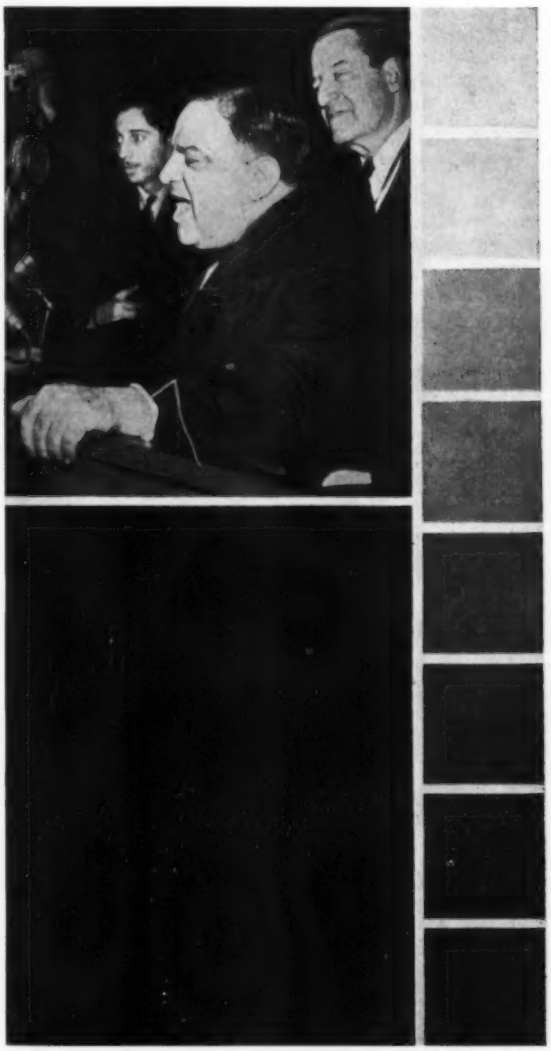


FIG. 1
Reproduction of Printing Plate Used in Subjective and Objective Evaluations

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

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[2] Research Dept., Sun Chemical Corp., New York, N. Y.

[3] Member TAPPI; Research and Development Dept., The Mead Corp., Chillicothe, Ohio.

I. Print properties of a solid
   1. *Uniformity:* Uniformity is the evenness of the color or density of the ink film over the total area of the solid. A perfectly uniform solid would show no mottle or speckle, no creepiness and no picking.
   2. *Contrast:* Contrast is the difference in brightness or density between the printed and unprinted sheet.
   3. *Finish:* Finish is the glossiness of the ink film.

II. Print properties of a half-tone
   1. *Tone reproduction:* Tone reproduction is the faithfulness of the reproduction of the original tone values of the printing plate on the print.
   2. *Uniformity:* Uniformity in a half-tone, as in a solid, is the evenness of the density of the printed areas. In addition, however, a perfectly uniform half-tone print would show no missing dots in the highlights.

It is clear that such different print qualities as uniformity, contrast, finish, and tone reproduction cannot be evaluated objectively or measured quantitatively by one method alone. Various methods to measure finish or gloss *(1)* and contrast have been known for a long time. There also have been a number of publications dealing with tone reproduction measurements of half-tone prints *(2, 3, 4, 5, 6)*. However, these papers were either not concerned with or did not achieve a numerical evaluation of the quality of tone reproduction in terms of tone reproduction measurements.* Finally the evaluation of uniformity *(7)* of solids or half-tones has been given little attention.

The specific objectives of this paper are to present two methods which permit a numerical evaluation of tone reproduction of a half-tone print and uniformity of a solid print.

Objective Evaluation of Tone Reproduction

The measurement of tone reproduction quality is based on the assumption that the tone values of the best obtainable print are identical with the tone values predicted by the printing plate.** A comparison of the ideal or theoretical brightness values with the actual brightness values of the half-tone prints leads to an objective evaluation of the tone reproduction. Each of these values can easily be determined. The actual brightness can be obtained from spectrophotometric measurements. The ideal tone values of a print can be calculated, using the following equation:

$$Y_{ideal} = aY_1 + (1 - a)\,Y_0$$

where a is the print area of the printing plate and Y_1 and Y_0 are the tristimulus or brightness values for $a = 1$ and $a = 0$, respectively. ($a = 1$ represents the solid print; $a = 0$, the unprinted paper surface). Similar equations to calculate tone values have been given by Murray *(2)* and Poulter and Croney *(3)*. Murray sets the brightness of the unprinted paper (Y_0) equal to 1 and Poulter and Croney fix both brightness values arbitrarily; $Y_1 = 0$ and $Y_0 = 1$. Such a procedure is certainly not justified in an evaluation of tone reproduction quality. The tone values of a half-tone print are not completely determined by the ratio of print to nonprint area as differences in the brightness of the unprinted sheet and solid play a considerable factor in the quality of tone reproduction.

Figure 1 shows a reproduction of the printing plate used in most of this work. The picture was used to obtain the subjective evaluations of the various print qualities given above. The series of half-tone blocks and the separate solid area were used for objective measurements. For some tone reproduction measurements, a printing plate containing twenty half-tone blocks was used. All prints were made on a Hacker precision proof press, taking special care to insure reasonably uniform impressions over the whole printing plate. Brightness data for the different half-tone blocks, the unprinted paper, and the solid print area were obtained from spectrophotometric reflection curves following the usual procedure. The print area of the printing plate was determined by photographing the printing plate using a magnification of 110X and measuring the area of a large number of dots on the negative with a planimeter. From the actual dot area and the ruling constant for the plate, the print area of each block was calculated with an average precision of ± 3%.

Figure 2 shows the results of a typical half-tone letterpress print. The abscissa represents the theoretical or ideal brightness and the ordinate gives the

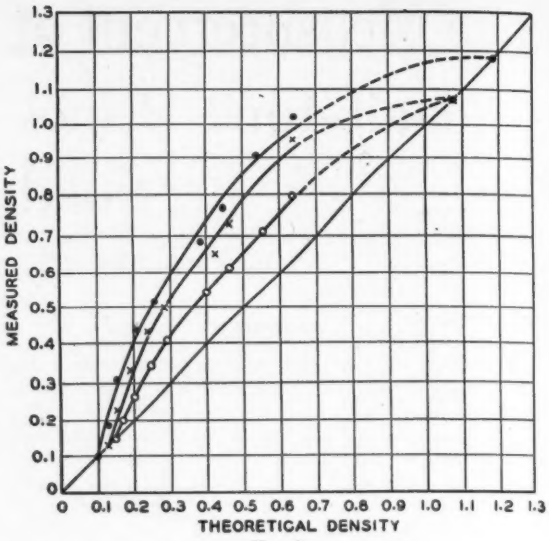


FIG. 3
Tone Reproduction Curves of Three Half-Tone Prints

* For photographic reproductions this problem has been studied quite intensively, particularly during the last ten years; see for example: Jones, L. A., Psychophysics and Photography, J.O.S.A. 34: 2, 66-88 (1944), and Mees, C. E. K., The Theory of the Photographic Process, Chap. XX, Macmillan Company, New York, New York.

** Jones, L. A., has recently shown (see *(8)*) that this assumption is not valid for the relationship between the brightness of the object and the brightness of the photographic positive. It is believed, however, that for the particular problem under consideration, the assumption is correct.

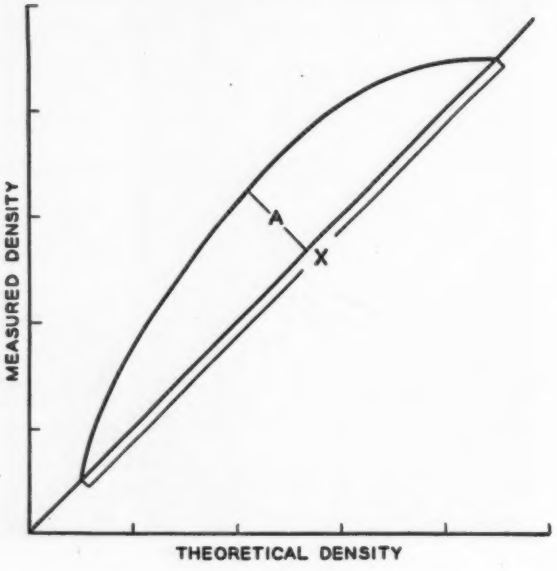


FIG. 2
Tone Reproduction Curve of a Half-Tone Letterpress Print

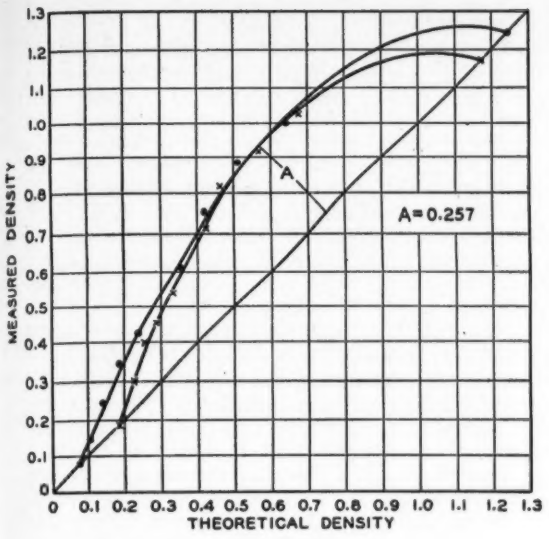


FIG. 4
Tone Reproduction of Two Prints of Different Contrast

measured brightness of the half-tone print. Brightness values are expressed as densities ($D = \log \frac{1}{Y}$). It will be noticed that the densities of the actual half-tone print are higher than the calculated density values throughout the whole range. Furthermore, the relationship between calculated and measured density is not linear. This means, first, that the tone values of the print are not a one-to-one reproduction of the original; in a one-to-one reproduction the points should all fall on a straight line, the slope being equal to one. Secondly, because of the changing slope of the curve, the tone reproduction is not only distorted but the distortion itself varies. In the highlights, the slope decreases rapidly so that the differences in tone values are exaggerated. In the middle tones where the slope approaches unity, the tonal differences are the same for the reproduction and original. (The half-tone print densities, in this region, are some constant factor greater than those of the printing plate.) In the three-quarter-tones, the slope gradually approaches zero and the differences in tone values are suppressed. The lack of "detail" in a half-tone print, particularly noticeable in the three-quarter-tones, is a direct consequence of the variable distortion of the tone reproduction.

Figure 3 shows tone reproduction curves for several half-tone prints of different tone reproduction quality. It will be noticed that differences in the deviations from the ideal tone reproduction curve are quite marked. These differences are a measure of the quality of tone reproduction. One other factor, however, has to be taken into account, namely, the overall density difference between the unprinted sheet and the solid print. The same deviation of the tone reproduction curve from the ideal one becomes more significant as the overall density difference is decreased. This point is shown in Fig. 4. Although the maximum deviation from the ideal is the same, the actual distortion of the tonal scale is larger for the print of lower overall density difference.

It is necessary now to find a simple parameter so that results obtained in this manner can easily be compared with subjective evaluations of tone reproduction. One way of expressing the results, although certainly not the only one, is to measure the deviation, in the middle tones, of the actual density curve from the ideal curve (see line A in Fig. 2), and then divide this quantity by the overall density difference (X). Figure 5 shows the relationship between subjective and objective tone reproduction evaluation for a number of half-tone prints. The subjective data are average values obtained from the judgments of different qualified observers. The vertical line indicates the maximum spread in judging the same print. All subjective evaluations were made on a percentage basis, 20 being the best print. The relationship which has been obtained is a typical one for correlations between average subjective judgment data and numerical evaluations of the same quantity. The subjective tone quality is approximately a linear function of the objective parameter until the subjective values approach the upper limit. At that point the subjec-

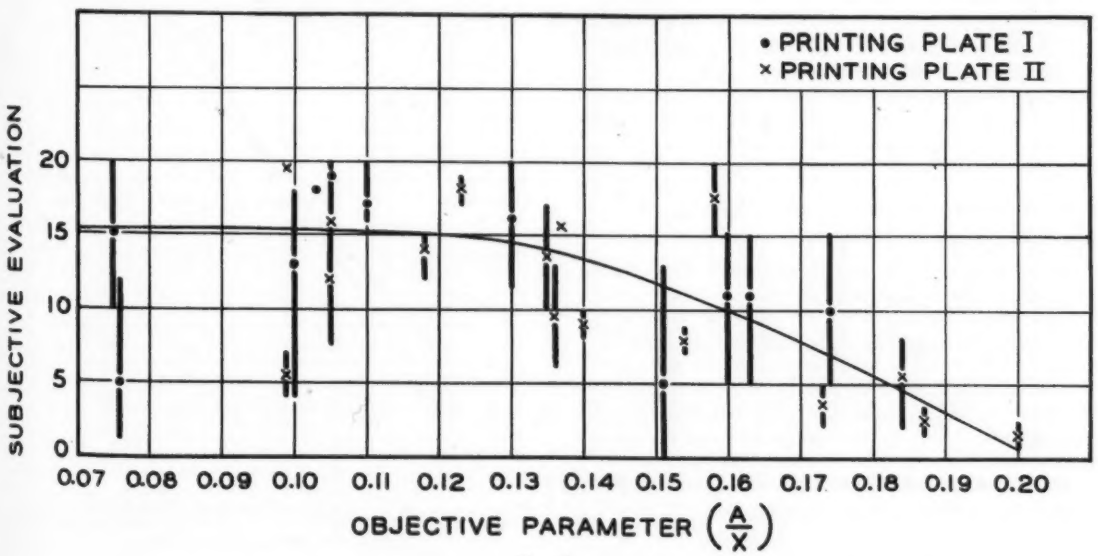

• PRINTING PLATE I
× PRINTING PLATE II
SUBJECTIVE EVALUATION
0 5 10 15 20
0.07 0.08 0.09 0.10 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19 0.20
OBJECTIVE PARAMETER (A/X)

FIG. 5
Comparison of Subjective and Objective Evaluations of Tone Reproductions of Half-Tone Prints

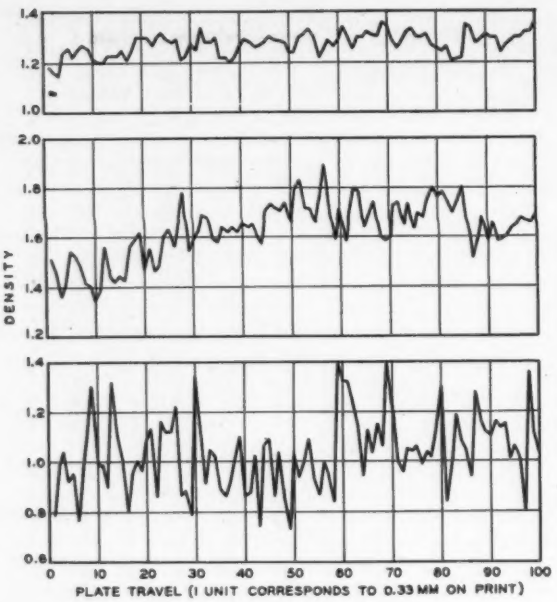


FIG. 6
Densitometer Tracings of Three Prints

tive data become more or less independent of the objective parameter. It will be noticed that three points in Fig. 5 are particularly out of line; in other words, subjectively these prints were rated equally poor, whereas, accordingly to objective measurements they show an excellent or a good tone reproduction. Each one of these prints, was obtained by using a very small ink coverage which means that the other print properties, namely, contrast and uniformity were very poor. It is believed that the large discrepancies under such extreme conditions are caused by the inability of the average observer to dissociate completely the judgment of one print quality from the remaining print qualities. Some of the minor discrepancies between objective and subjective tone reproduction evaluations might be attributable to the same factor.

Although the parameter chosen to evaluate tone reproduction measurements, has given, on the whole, satisfactory results, it is by no means the only or necessarily the best procedure to represent such data. The use of the density gradiant *(8)* for example, instead of some average quantity might be more advantageous in certain cases.

Objective Evaluation of the Uniformity of a Solid Print

In the introduction the uniformity of a solid print was defined as the evenness of color or density of the print. Evenness in terms of measurable quantities means, however, equality of brightness or density over the whole area. It is obvious that an objective evaluation of uniformity of a solid print must therefore be based on the measurement of brightness and brightness differences of the print area under consideration. In principle this problem is similar to the problem of graininess evaluation of a photographic negative *(9)*. This being established, two problems arise immediately:

1. What should be the resolution of the scanning unit?
2. What method should be used to scan the printed surface?

With respect to the first point one can say in general that the resolution should certainly not be smaller than that of the human eye. The upper limit cannot be set as definitely because brightness differences in ordinary solid prints can extend over a fairly wide range up to a few millimeters. In the method employed here the smallest measurable area on the print was 0.02 mm².

The most direct way to scan a printed surface would consist in measuring the reflected light intensity of a light "pencil" of the proper dimension*. However, the technical difficulties involved in measuring small differences in brightness extending over small areas are considerable**. A technically simpler procedure is to first photograph the solid under the proper conditions and then densitometer the negative. This method is not as direct and possibly not as accurate as the former method. However, at the time this work was started the necessary equipment and material to follow the reflection method was unobtainable, whereas it was relatively simple to carry out the work by the photographic method. For these reasons the photographic method was chosen.

The set-up used to photograph a representative area of a solid print such as was shown in Fig. 1 consists simply of a carbon arc, a mirror to reflect the light onto the print sample—the print sample being mounted on a glass slide surrounded by a black surface, a photographic lens, variable bellows and the photo graphic plate holder. A magnification of 3X was used to obtain the negative of the solid print. Eastman Kodak Tri-X Panchromatic type B plate was chosen to make the photographs because the

* Such an attempt has been made by Mr. Chapman (private communication). It seems that Patra intended to measure uniformity in such a manner (see discussion *(3)*).

** The use of electron multiplier tubes which are now commercially available might overcome most of these difficulties.

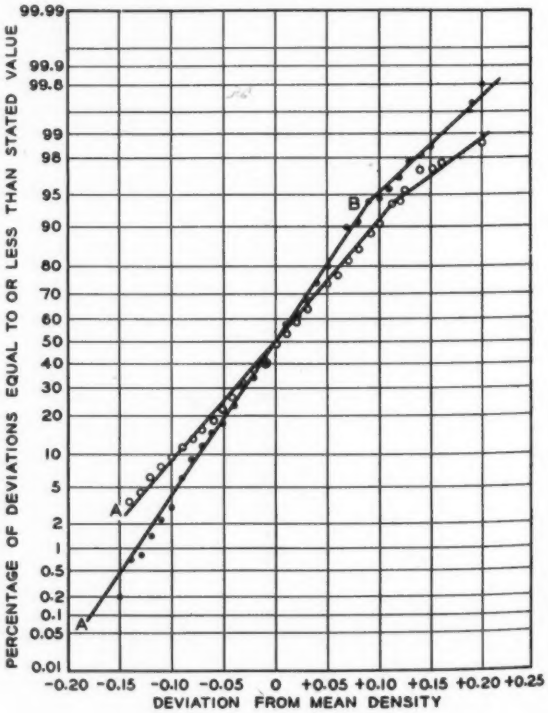


FIG. 7
Frequency Distribution of Density Measurements

linear part of the density-log exposure curve of this plate extends over a sufficiently wide range of densities to cover all the density values of the print. The exposure for each photograph was chosen in such a way that the average density of the negative fell about in the middle of the linear part of the density-log exposure curve of these plates for a developing time of nine and a half minutes at 68°F. Using this developing time and Kodak DK 60 A developer the slope of the linear part of the density-log exposure curve (γ) was 1.17. Although a slope different than one did not give a one-to-one reproduction of the density values, the distortion introduced in this way was the same for all prints.

Density measurements were made in the past with a simple densitometer of the type described by Spiegel-Adolf and Pickham *(10)*. It consisted of a stable light source, a lens to focus the light beam onto a slit—the slit being a circular shape with a diameter of 0.5 mm., a movable stage, a light gathering lens and an electronic photometer.* This densitometer has now been replaced by a Leeds and Northup recording microdensitometer. Figure 6 shows sections of densitometer tracings for three different prints. (Five hundred measurements were made on each plate.) The striking differences in the density distributions are immediately apparent.

The problem now arises again to find a simple parameter to evaluate the uniformity of a print numerically on the basis of such measurements and to correlate it with subjective judgment data. The average deviation from the mean density value is obviously the simplest parameter that can be chosen; for the ideal case the average deviation should be zero. However, if the frequency distribution of the density values does not follow the normal distribution law, the average deviation, which is proportional to the modulus of precision, is not sufficient to give a numerical evaluation of the density data.

Figure 7 shows the frequence distribution of the density data obtained from two different prints, plotted on probability graph paper. On this graph paper the scale showing the number of occurrences is so arranged that data which follow the normal (or Gaussian) distribution law yield straight lines, the slope of the line being proportional to the average deviation. If the plot deviates from a straight line the distribution deviates from the normal. It will be noticed that the normal distribution law is not followed beyond point B in Fig. 7.

In order to take into account this deviation from the normal distribution the slope and the length of the line AB were determined. The slope of each line was calculated using the same abscissa values; the length of each was measured as the percentage extension. The resultant of these two values was chosen as the final parameter for objective uniformity evaluation. When the distribution is normal or when the percentage extension is constant for various distributions, this parameter is proportional to the average deviation.

The type of distributions, shown in Fig. 7, is due to the presence of two distinctly different kinds of nonuniformity: 1. mottle or speckle of the ink film itself; and 2, bright spots caused by picking or insufficient ink coverage. The latter increases the frequency of the high density values on the photographic negative and produces the break at point B.

In subjective evaluations, each of these factors contributes to the uniformity judgment. Depending on the relative importance (or weight) given to the nonuniformities caused by insufficient ink coverage and those caused by mottle, the judgments of the quality of a solid print vary considerably. In obtaining a final parameter, the weight factors of these two quantities must be fixed. The best agreement with subjective evaluations for the prints investigated was found when equal weight was given to the percentage extension and to the slope in calculating the resultant or final parameter.

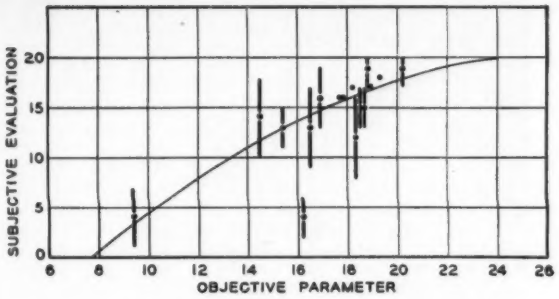


FIG. 8
Comparison of Subjective and Objective Evaluations of Uniformity of Solid Prints

A comparison of the subjective evaluations with the objective parameter is shown in Fig. 8. Except for one of the prints, the objective parameter is in agreement with the subjective value. The deviation of this print from the general relationship can probably be explained by the small ink coverage of this print. Under such conditions the subjective evaluation of uniformity is influenced by the extremely low contrast. The scattering of the points around the curve are partly due to uncertainties in the values given for the subjective evaluation, (The subjective scale here is the same as the one used in tone reproduction evaluations.) and partly due to the overall accuracy of the photographic procedure which can be estimated to be of the order of $\pm$ 5%. A more serious criticism of the data presented in Fig. 8 is the lack of prints with subjective evaluations below twelve. The general shape of the lower portion of the curve can only be approximated until more data are collected.

Although the reported treatment of the density measurements of solid prints may not be the most complete or the simplest in operation, it has proved satisfactory in the cases studied, to show that it is possible to evaluate this important print quality on an objective basis.

Literature Cited

1. Harrison, V. G. W., Determination and Measurement of Gloss and Smoothness of Paper, *Paper Maker and Brit. Paper Trade J.* 109, Midsummer Special Number, pp. 4, 5, 7, 8, 10, 13 (1945), and 110: 2, pp. TS 16-20 (1945).
2. Murray, A., Monochrome Reproduction in Photoengraving, *J. F. I.* 221, p. 721-744 (June, 1936).
3. Poulter, A. C., and Croney, R. G. W., The Printability of Paper: Tone Reproduction with Special Reference to Newsprint. Proc. Tech. Sec. *P. M. A.* 22, 127-165 (1941).
4. Dorst, P. W., Half-tone Densities, *J. O. S. A.* 33, 436-439 (1943).
5. Optical Density as a Measure of Tone Values in Lithography, Lithographic Technical Foundation, Inc., Technical Bulletin No. 4 (1945).
6. The Relations between Dot Area, Dot Density and Tone Values for Halftone Images, Lithographic Technical Foundation, Inc., Technical Bulletin No. 5 (1945).
7. Bekk, J., Measuring the Uniformity of Printed and Other Surfaces, *Zellstoff u. Papier* 16, 281-283 (1936).
8. Jones, L. A., The Evaluation of Negative Film Speeds in Terms of Print Quality, *J. F. I.* 227: No. 3 (1939).
9. Mees, C. E. K., The Theory of the Photographic Process, Chap. XXI, Macmillan Company, New York, N. Y. (1942).
10. Spiegel-Adolf, M., and Peckham, R. H., Simple Photoelectric Microdensitometer, *Ind. & Eng. Chem. (Anal. Ed.)*, 12, p. 182-184 (1940).

* Photovolt Electronic Photometer, Photovolt Corp., New York, N. Y.

SECOND ANNUAL CONFERENCE TAPPI FIBROUS AGRICULTURAL RESIDUES COMMITTEE

Front row, left to right: S. I. Aronovsky, R. G. Macdonald, E. C. Lathrop, B. F. Stahl, R. P. Getty, John Traquair, Sidney Frohman, S. D. Wells; Second row, A. J. Ernst, C. L. Wood, N. L. Cochran, J. D. Spence, P. A. Schilling, H. J. Allison, E. P. Lannan, F. D. Long; Rear, A. W. Turner, H. Lyon, R. E. Ketten, J. H. Shollenberger, N. H. Sandberg, M. F. Knack, H. L. Lamb, E. T. Street, D. L. Owen, R. F. Burns, G. Johnson, J. B. Krider, R. M. Morris, H. M. Sutcliff, J. R. Little, J. O. Younger, V. E. Bush, T. R. Naffziger, U. C. Wisman, H. M. Blandin, N. F. Wilson, G. H. Nelson, W. E. Gross and L. E. Talley.

Technical Association Meets at Peoria, Ill.

The second annual spring conference sponsored by the Fibrous Agricultural Residues Committee of the Technical Association of the Pulp and Paper Industry, was held at the Northern Regional Research Laboratory, Peoria, Ill. on Friday, April 26, 1946. S. I. Aronovsky of the Northern Regional Research Laboratory presided as chairman. A notable feature of the meeting was the presence of a number of the leading executives of the strawboard industry.

E. C. Lathrop, acting director of the Northern Regional Research Laboratory, extended a welcome to the Laboratory and lauded the group for their fine cooperative attitude in pooling their interests for the general good of the strawboard industry. He reported the plan now in effect of holding meetings of farmers in all of the agricultural counties to discuss their mutual problems. He stated that there is about 100 million tons of waste agricultural materials each year in the United States. This is almost the amount of forest and petroleum products available. Dr. Lathrop expressed the opinion that straw, if treated properly, can make the best material for corrugating purposes.

Sidney Frohman, President of The Hinde & Dauch Paper Company, Sandusky, Ohio, outlined the history of the strawboard industry. Straw was one of the first materials used to make paper in this country. It was used largely for wrapping papers. A week's production of strawboard for corrugating amounts to about 8000 tons. Of papers used for corrugating 37% is straw, 25% kraft, 19% waste paper and 19% is chestnut semi-chemical pulp. He commended the objectives of the Committee and felt that an intelligent effort to investigate the technical problems of the industry was highly justified. This should eventually result in improved strength, wider markets, better cooking procedures, and the development of new properties. He also expressed enthusiastic aproval of the Laboratory's program and stated that is far ahead of the industry that it is serving and should continue to make progress which eventually should greatly benefit the industry.

R. G. Macdonald, Secretary of TAPPI, discussed the many ways in which the Technical Association of the Pulp and Paper Industry can be of direct service to the strawboard industry. He outlined in detail the divisional organization of the Association and pointed out that the forty or more committees deal functionally with nearly all of the engineering and manufacturing problems of paper and board making. The work of a large proportion of these committees has a direct bearing on strawboard manufacture. An important service to all branches of the industry has been the development over the years of the basic standard testing procedures relating to the industry's products. This service was in part responsible for the recent award of the Certificate of Achievement to the Association by the United States Navy. Mr. Macdonald pointed out that one of the great contributions which the Association has made to the progress of the industry has been the organization of conferences such as this which bring together the men of the industry on a basis free from competitive and distrustful attitudes to discuss common problems and to act together to advance the industry's welfare. Such meetings have convinced most of the industry that much can be gained and nothing lost by such concerted efforts.

A. W. Turner, assistant chief of the Bureau of Plant Industry, Soils and Agricultural Engineering, U. S. Department of Agriculture, Washington, D. C., talked on Straw Procurement and Collection. Mr. Turner stated that one of the major problems in the conversion of such agricultural residues as wheat, flax, rice, and oat straws, etc., for useful purposes is how to get these bulky byproducts of farming harvested and delivered to mills in a form and at

a price which will enable industry to use them in competition with other materials.

This problem involves six principal interests: the farmer, industry, farm equipment manufacturers, crop breeders, chemical engineers, and agricultural engineers. The most recent development in the agricultural engineering has been the combine harvester-thresher. In 1945 about 75% of all wheat harvested in the United States was combined, about 22% was cut with a binder and then threshed and the remainder was harvested in various ways. In Kansas about 95% of the wheat crop was combined. In Oklahoma it was 91% and in North Dakota about 55%. This has presented a major problems to the strawboard industry since much less straw is available to it when the combine is used. The strawboard industry will have to define its needs accurately and work closely with the farm machinery companies to increase its straw supply since the farmer is unlikely to be sympathetic. The farmer will cooperate if there is sufficient financial inducement for him to do so.

There appears to be several ways in which this problem can be met, the one favored by Mr. Turner is to use a binder and thresher to harvest the grain and bale with a stationary baler either direct from the stack, using a conveyor provided with grating capable of separating out the chaff or bale direct with a blower, the thresher to be provided with a chaff deflector.

This address was followed by a spirited discussion in which many took part. It was evident that irrespective of what may be done there is a major problem of educating the farmer to understand the benefit to himself of cooperating with the strawboard industry and the farm machinery builders.

H. M. Blandin of the Central Fibre Products Company, Quincy, Ill., Chairman of the Subcommittee on Procurement, Preservation, and Storage, demonstrated the use of the Hart moisture meter and the Delmhorst moisture detector for estimating quickly the moisture content of straw bales. Both of these instruments have been redesigned on the advice of the committee to do this specific job. The results are not perfect and further redesign will be necessary. A thorough study of the new designs will be made at the Peoria Laboratory.

To assist the Farm Equipment Institute to arrive at a better design for combine and baler construction Mr. Aronovsky led a discussion relative to straw bale specifications. It was agreed that the bale should measure 16 x 18 x 42 inches and should weigh 80 pounds, air dry. The binding can be done with either wire or string. The chaff should be less than 5% and the height of the stubble left in the field should be 3 inches.

The Committee indicated that it intends to prepare a comprehensive monograph on strawboard manufacture and properties.

Mr. Aronovsky, reporting for the subcommittee on Classification, showed slides indicating the first results obtained in cooking straws, soybean stalks and other wastes.

Norval F. Wilson of the Alton Box Board Company, Alton, Ill., Chairman of the Subcommittee on Testing, gave a preliminary report on the results of physical testing of samples of strawboard from nine cooperating companies. The tests were made independently in the laboratory of the Northern Regional Research Laboratory, Institute of Paper Chemistry, Ohio Boxboard Company and the Container Corporation of America. This report will be published soon. The results are coded so that each cooperating mill may know the results obtained on its own strawboard and can therefore take measures to improve the properties that may not be as good as similar properties of the boards made by other companies.

Following the luncheon the group was taken on a tour of the Peoria Laboratory and observed a demonstration of a novel process of preducing strawboard. Blended with strawboard made by the customary procedure was a pulp made by specially threshed and cut straw which was cooled in a 2½% caustic solution with live steam. This was passed through a Bauer refiner and produced a new product approaching kraft pulp in many respects. The blend has new and very desirable properties.

K. B. Raper and associates of the Fermenting Division of the Laboratory gave an interesting talk on moulds and fungi, illustrating each with samples and slides.

At the close of the conference several of the company executives present expressed their opinions relative to the accomplishments of the committee and the Laboratory. Mr. Frohman, President of Hinde & Dauch Paper Company, felt that every major executive in the industry should have been present and are in for a rude awakening when they become acquainted with the work that is under way. Such work, he stated, is along the lines desired by the National Paperboard Association.

Mr. Wood, Vice President of the River Raisin Paper Company stated that the creation of the TAPPI Fibrous Agricultural Residues Committee was worthwhile since it is only through such an agency that work can be done collectively that will far surpass what any single mill organization can do individually.

Mr. Lannan, Vice President of the Central Fibre Products Company, stated that a great deal of research work on strawboard needs to be done. Cooperative work with Farm Machinery Institute should produce desirable results. The wood situation in this country does not look too good for the future expansion of the industry and annual crops will probably eventually be used far more extensively than at present.

Mr. Aronovsky indicated that if the straw collection problem is properly solved the Laboratory will develop a number of specialty pulps that will change the entire nature of the industry.

Mr. Getty, Vice President of the Fort Wayne Corrugated Paper Company, stated that he was deeply impressed by the intelligent broad and fundamental approach to the problem being made by the Technical Association of the Pulp and Paper Industry and indicated that Mr. Aronovsky's committee can depend on his company for any support needed.

Mr. Burns, Vice President of the Terre Haute Paper Company, stated that his company will back up the Committee with personnel and cooperative assistance. He also extended an invitation to those present to visit the mills of his Company. He felt that there should be visiting among the personnel of the various mills of the industry.

Mr. Cochran, Manager of the Circleville, Ohio mill of Container Corporation of America, said that his strawboard group of mills will be gland to cooperate as it already has done in furnishing personnel to the committee and participating in cooperative tests and investigations.

Mr. Aronovsky thanked all who participated in the meeting, which included nearly all present and indicated that a great amount of work had been accomplished in the meeting even though a very long program was crowded into one day because of the crowded hotel situation. The Committee will proceed immediately to carry out the recommendations that were made by the conference.

Those present included: H. J. Allison, Jr., S. I. Aronovsky, H. M. Blandin, R. F. Burns, V. E. Bush, N. L. Cochran, A. J. Ernst, S. Frohman, R. P. Getty, W. H. Goss, G. Johnston, R. E. Ketten, M. F. Knack, J. B. Knider, H. L. Lamb, E. P. Lannan, E. C. Lathrop, J. R. Little, F. D. Long, H. Lyon, R. G. Macdonald, R. M. Morris, T. R. Naffziger, G. H. Nelson, D. L. Owen, H. E. Roethe, N. H. Sandberg, P. A. Schilling, J. H. Shollenberger, J. D. Spence, B. F. Stahl, E. T. Street, H. M. Sutcliffe, L. E. Talley, J. Traquair, A. W. Turner, S. D. Wells, R. V. Williamson, N. F. Wilson, U. C. Wisman, C. L. Wood, J. O. Younger.

Ohio TAPPI Discusses Paper Curl

The Ohio Section of the Technical Association of the Pulp and Paper Industry met on April 13, 1946 at the Hotel Manchester, Middletown, Ohio, at a joint meeting with members of the Miami Valley Division of the Superintendents Association. Eighty-six members attended.

Carl Roess, of the Wrenn Paper Company, chairman, presided. The subject for discussion dealt entirely with paper curl, causes and remedies. Panel leaders were Ronald Drake of Champion Paper & Fibre Co., who spoke on "Types of Paper Curl and Their Causes"; Val Friedrich, of The Beckett Paper Co., whose paper covered "Factors Influencing Paper Curl" and Colin Gardner III, substituting for W. E. Sooy of The Gardner-Richardson Co., who spoke on "Paper Curl in Board."

Mr. Drake confined his remarks mostly to the possibilities of curl in the pressroom. Paper originally shipped flat when subjected to conditions of changing humidity might suffer from curl even though a perfect sheet were delivered to the pressroom. Mr. Drake, formerly a test director of W. F. Hall Printing Co., was well qualified to discuss this angle of the question. Curl can also be induced in the sheet, especially in offset printing in which moisture is added in the process of printing. Such conditions as noted above are seasonal especially where there is no humidity control in the pressroom. Trouble can also be caused by improper storage where drying out of edges in stacking causes cockling of the sheet.

Val Friedrich discussed the question in connection with the manufacture of lighter weight, single ply papers, and pointed out the difficulty of maintaining relative humidity of the air surrounding the fiber, which has the property of absorbing, or desorbing moisture vapor. He pointed out these variables as type of fiber, cooking time of pulp, degree of bleach, degree of beating or jordaning. Formation of the sheet on the fourdrinier is a factor. Removal of water by presses and dryers, as well as the act of tub sizing, introduce other variables.

Colin Gardner III discussed the matter of curl in the manufacture of board, dividing his subject into curl caused by mechanical equipment, such as winding, stacking, packing, etc. of finished product; and physical curl which results from unbalanced surface stresses between the top liner and back liner, or internal stresses in the sheet itself. He pointed out that the differences in furnish, viz; sulphite in liner, old papers in filler, show different degrees of absorption, thus causing a curl in the finished sheet. This shows up more noticeably in beater sizing due to the fact that the liner usually is hard sized, whereas the filler has very little sizing, if any. As the sheet reaches the calender stack the back liner and filler absorb more water from the water box than the top liner, thus causing dimensional changes within the sheet. This condition often times can be corrected by the number of water boxes used or the amount of starch in the water at the calenders. Hydration has some effect on the curl, as well as the use of spreader bars.

Those present included: Jos. Andrews, Austin Andrews, Tony Agronin, Duncan Brown, W. P. Baxter, B. M. Baxter, C. E. Brandon, Henry Borchers, N. S. Benzing, Harold F. Bennett, Herb Brawn, G. E. Christmann, Les Currier, Fred Clarke, Ronald Drake, John Ditmeyer, Don Goodman, Leo Geiser, W. H. Grace, Ken Geohegan, Colin Gardner III, H. B. Gerber, R. F. Englehardt, Rob Eminger, Harry C. Fisher, Andy Frazier, G. E. Faber, Val Friedrick, Jr., Merle Grassmann, Arthur W. Griffith, Harry Hadley, E. A. Hoey, S. Hluchan, A. N. Holland, Harold Harvey, E. C. Hendrickson, Lowell Haworth, E. A. Johnson, J. W. Jelks, T. A. Johnson, Harold C. Koch, Roy Lawson, Edward Lum, Homer Latimer, John Latimer, R. C. Mathers, Kon Matchuk, J. F. Mall, Reno R. Miller, R. D. McCarron, Sam Olsen, A. Martin, R. W. Polleys, Herman Strietmann, J. H. Symes, Paul Schaffrath, F. W. Storey, Claude A. Sorg, Wm. Singer, Paul Schreiber, Stanley Trasset, Sam Yates, C. K. Textor, John W. Natwick, Geo. Thompson, Vernon Pape, Paul Rookey, W. A. Thomas, C. J. Wright, Wm. Reiger, John Vurnett, Frank A. Root, Robert O. Stephenson, Myron Wittmer, D. M. Yost, B. D. Patrick, Carl D. Roess, Douglas Robbins, E. R. Van Atta, F. L. Zellers, Duke Williams, H. H. Vandenberg, Geo. Ware, R. G. Topke.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

J. C. Ainslie, Engineer, Consolidated Paper Company, Monroe, Michigan, a 1934 graduate of the University of Michigan.

Bertram W. Barrows, Control Superintendent, Gould Paper Company, Lyons Falls, New York, a 1928 graduate of Northeastern University.

Walter J. Bublitz, Jr., Student, Institute of Paper Chemistry, Appleton, Wisconsin, a 1941 graduate of the University of Arizona.

Girard C. Eck, Assistant Chief Chemist, Rayonier, Inc., Shelton, Washington, a 1931 graduate of State College of Washington.

Raymond S. Hart, Manufacturer of Electrical Instruments, Grand Central Terminal, New York, N. Y., a 1911 graduate of Pratt Institute.

William A. Kraske, Gould Paper Co., Lyons Falls, New York, a 1944 graduate of the University of Wisconsin.

Henri Marlier, Chief Chemist, Societe Anonyme des Papeteries de Genval, Genval, Belgium, a 1942 graduate of Institut Meurice-Chimie, and a 1943 graduate of Institut de Fermentation.

Week's Record of Trends in The Paper and Pulp Market

Office of the PAPER TRADE JOURNAL, Wednesday, May 1, 1946.

Expanding supplies of practically all types of paper and paperboard continue to lag behind demand. Wood pulp difficulties in the South have limited output of some grades. Drain on available supplies is due to heavier weights of paper grade and increase in paper production. Paperboard mills are forced to count heavily on waste paper for many grades produced. Demand for container board, folding and set-up boxboard far ahead of production.

Book paper output increased as a result of pulp and paper mill purchases by publishing houses; with consumption for periodicals expected to reach 1,000,000 tons for 1946. Speculative buying and inventory requirements of kraft wrapping paper and grocery-bag paper puts demand above supply. Demand for bond and tissue continues heavy. Shortages, in some cases, are the result of shifts in output to more profitable grades.

Canadian production of newsprint, currently at 92 per cent of rated capacity, may reach 4,000,000 tons for 1946. Production for the first three months was 971,000 tons, which is at a yearly 3,884,000 ton rate.

The index of general business activity for the week ended April 20 declined to 125.9, from 126.7 in the previous week, compared with 143.9 for the corresponding week in 1945. The index of paperboard production fell to 165.0, from 168.3 in the previous week, compared with 159.5 for the corresponding week in 1945.

Paper production for the week ended April 20 was estimated at 102.5 per cent, compared with 103.6 for the preceding week, with 90.7 for the corresponding week in 1945, with 89.7 for 1944, with 89.8 for 1943, and with 100.1 per cent for the corresponding week in 1942.

Paperboard production for the week ended April 20 was 101.0 per cent, compared with 101.0 per cent for the preceding week, with 98.0 for the corresponding week in 1945, with 98.0 for 1944, with 97.0 for 1943, and with 93.0 per cent for the corresponding week in 1942.

Wood Pulp

Swedish export requirements during the forthcoming shipping season will have to be met entirely out of the current year's production, which is not likely to exceed about 70 per cent of the normal prewar output. Sweden is reported to have held out 700,000 tons of cellulose for the American market.

Only 20 per cent of the wood pulp consumed in the United States is affected by the new ceiling prices, since 80 per cent is produced by integrated companies using their own wood pulp in paper manufacturing. Of the 20 per cent affected, about one-third is produced in the United States; the other two-thirds coming from Canada, Newfoundland and Northern Europe.

Rags

Mill buying of new cotton cuttings is currently reported to be active. Ceiling prices can be obtained for both white and colored cuttings. White shirt cuttings and unbleached muslins are in short supply.

Demand for old cotton rags is active. Improved supply of heavy wipers has eased the roofing rag market somewhat. Old whites and blues are in heavy demand.

Old Rope and Bagging

Market remains steady with the demand for Manila rope above supply. All Manila rope sells easily at 5.75c. Demand for sisal continues to increase at the 4.75c ceiling. Soft jute brings 5 to 5.50c, and hard jute 3.75 to 4c.

Demand for gunny is less active this week. Sales range from $3.75 to $4.00. No. 1 scrap burlap also brings $3.75 to $4.00; with inferior grades at $3.25 to $3.50. European bagging has been offered at $4.25 ex-dock, but paper makers are temporarily indifferent to import offerings.

Waste Paper

Market remains tight with major grades in heavy demand. Some sections report lighter demand for corrugated and news. Mixed paper is still a rarity.

High grades are very strong. Greatest demand is for tabulating cards, kraft paper, soft and hard white shavings, ledgers and No. 1 fly leaf.

Palmalene Offered As A New Fatty Acid

BOSTON — The Beacon Company, manufacturer of chemicals, has developed for commercial use Palmalene, a synthetically made product. Palmalene's specifications, which include a saponification number of 180-185, iodine value of 55-60 and titre of 30, make it suitable for many uses. It is of special interest for textile specialties, soap making, alkyl resins, polishes, wetting agents, cosmetics, rubber compounding, kier assistants, driers, and pulp and paper manufacture. Data Sheet and Price Schedule may be obtained by writing The Beacon Company, 97 Bickford Street, Boston, Massachusetts.

Texas Plantings Use Up Supply

COLLEGE STATION, Texas—Close to 1,761,000 tree seedlings, most of them pine, were planted by Texas farmers, forest operators and other citizens in 67 counties during the past planting season which ended in March, W. E. White, director, Texas Forest Service, A. & M. College, reported this week. Farm plantings accounted for three-fourths of the trees and commercial planting the balance. The report showed that 196 farm plantations and seven industrial plantations were set out.

At least five million trees could have been planted if they had been available, the demand was so great, Director White said. The trees are grown by the Texas Forest Service on the Indian mound nursery near Alto.

Slash, loblolly, shortleaf and longleaf pine accounted for the greatest number of seedlings distributed this year, the total amounting to 1,636,000 trees. Hardwoods, including bois d'arc, black locust, black walnut, catalpa and other species, amounted to approximately 125,000 seedlings.

Eleven counties each reported planting more than fifty thousand seedlings. Newton county showed the highest total with 498,000 trees planted. Other counties over the 50,000 mark were:

Anderson, 228,000; Walker, 153,000; Jasper, 84,000; Cherokee, 75,000; Harrison, 73,000; Nacogdoches, 69,000; Angelina, 63,000; Smith, 59,000; Cass, 58,000; Orange 53,000.

Cass County with 15 plantations, showed the greatest number of individual farm plantings. Harris county reported 12, Cherokee and Smith 11 each.

The seedlings are sold at cost, Director White said, and the money received from the sales is turned back into production of next year's crop of trees.

The federal government cooperates with the Texas Forest Service on the project, the director stated.

Calco Promotes Rauchfuss In Dyestuff Department

Arthur A. Rauchfuss has been appointed an assistant sales manager of the Calco Chemical Division, American Cyanamid Company, in charge of sales of dyestuffs and intermediates to the dry color manufacturers. Mr. Rauchfuss received his Bachelor of Science Degree from Polytechnic Institute of Brooklyn, and in 1911 joined the Robert Gair Company, of Brooklyn, remaining with that organization until 1918. During World War I he served with the Chemical Warfare Service as a civilian chemist, and in 1919 he joined the Calco organization, where he has been closely identified for many years with the development and sale of Calco products to the "Lake" trade.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 1, 1946.

BLANC FIXE—Quotations on blanc fixe continue firm and unchanged. Demand is moderate. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—Current demand is heavy. Supply situation is reported favorable at this date. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 33 cents per pound; 2,000 pounds, 33¼ cents per pound; less than 2,000 pounds, 33¾ cents per pound, f.o.b. shipping point. Imported, currently above ceiling prices.

CAUSTIC SODA—Demand very heavy. Production high, but deliveries slow. Market tight. Supply of drums short. Solid caustic soda is quoted at $2.30 per 100 pounds; flaked and ground is quoted at $2.70 per 100 pounds.

CHINA CLAY—Moderate demand reported. Quotations remain unchanged. Supply short. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand reported heavy with essential paper requirements fully met. Quotations unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—No offerings and sales. "G" gum rosin is quoted at $6.74 per 100 pounds, in barrels, at Savannah; "FF" rosin at $6.70 per 100 pounds in barrels, at New York; seventy per cent gum rosin size at $6.95 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged for the current week. Current demand is relatively heavy. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand continues for all-over requirements. Market remains tight with demand above output. Bulk lot shipments steady. Bagged lots still slow. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.95; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Corn market restricted due to small supply. Prices steady. Starch prices continue unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA — Demand reported good. Supply situation improving. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is currently quoted at $1.75 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Demand active. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand good. Domestic grades are currently quoted at from $16 to $30 per ton at mines; Canadian at $24 to $30 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—			
Roll, contract	*$67.00	@	—
Sheets	75.00	@	—
* OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, Delivered			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
* OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila 35 lb.	6.00	"	7.00
Boards, per ton—			
News	*54.00	@	—
Chip	*54.00	@	—
Sgl. Mla. Lt. Chip	*65.00	@	—
White Pat. Coated	*79.00	@	—
Kraft Liners 50 lb.	*74.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper
Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.50
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (water-marked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers' Prices, Less Freight. Not Exceeding OPA Allowances.

Bl. Softwood Sulphite			$94.00
Unbl. Softwood Sulphite			82.00
Bl. Hardwood Sulphite			91.50
Unbl. Hardwood Sulphite			79.50
Bl. Mitscherlich			81.00
Unbl. Mitscherlich	72.00	@	82.00
N. Bleached Sulphate			94.00
S. Bleached Sulphate			88.00
N. Semi-Bleached Sulphate			89.00
S. Semi-Bleached Sulphate			83.00
N. Unbl. Sulphate			76.00
S. Unbl. Sulphate			69.50
Bl. Soda			84.00
Unbl. Soda			80.00
Groundwood			58.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$12.50
Lake Central	12.50
Southern	15.00
West Coast (in area)	9.50
West Coast (out area)	15.50

	50%-80% Air Dry Weight
Northeast	$10.50
Lake Central	10.50
Southern	13.00
West Coast (in area)	8.50
West Coast (out area)	14.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$7.50
Lake Central	7.50
Southern	10.00
West Coast (in area)	6.50
West Coast (out area)	12.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

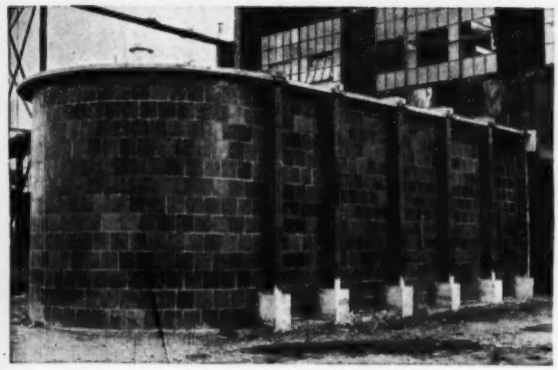
New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1.	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

* OPA Maximum Prices.

You Paper Mill Men • *take a Tip on Kalamazoo Tile Stock Tanks and Chests • you can't beat them for* STRENGTH *and* DURABILITY •



Kalamazoo Vitrified Glazed Tile *is a "Natural" for Paper Mill Needs—*

Smooth, hard, strong, easily cleaned and highly resistant to chemical action, this marvelous vitrified glazed tile type of construction is preferred by scores of leading paper mill executives and engineers. Adaptable for stock tanks and chests of all kinds. Costs no more than concrete tanks that require constant maintenance expense.

An exclusive method of glazed tile tank construction developed by Kalamazoo engineers. It provides greater flexibility and lower cost for all paper mill stock handling problems. Immediately available.

● **Any Size or Shape Desired—**

Wide, narrow—shallow or deep. Round, rectangular or square. Half-round or tapered bottom and corners. Mid-feathers and fins where needed to control stock flow. Adaptable to pumps or agitators. Construction individually designed to meet space, tonnage or production requirements.

Ask for engineering data.

Kalamazoo TANK & SILO CO.
KALAMAZOO • MICHIGAN

PENNOTEX OIL CORPORATION
29 Broadway
New York, N. Y.

AMORPHOUS WAXES
Melting Points 120° F. to 205° F.

For the Manufacture of

LAMINATING PAPER . . GLASSINES . . WATER-PROOFING . . GREASE PROOFING . . EXTENDERS FOR PARAFFIN, FOOD CONTAINERS, CONTAINER LININGS, ADHESIVENESS AND PROTECTIVE COATING.

~~HIGH SPEED~~

PAPER BAG MACHINERY

MANUFACTURED BY

WEBER

H. G. WEBER & COMPANY, INC.
KIEL, WISCONSIN

Jordan Shell and Plug Fillings
TRADE-MARK
POSITIVE
Reg. U. S. Pat. Off.
High Speed Disc Refiner
THE BAHR BROTHERS MFG. CO.
MARION, INDIANA, U.S.A.

THE HAYDEN WIRE WORKS, INC.
Manufacturers of
BRONZE and BRASS WIRE CLOTH
West Springfield, Mass.
Cylinder Covering a Specialty

KOHLER AUTOMATIC WEB TENSION CONTROLS maintain an absolutely constant, uniform unwinding or rewinding tension from start to finish of each roll.

THE KOHLER SYSTEM COMPANY
159 E. CHICAGO AVENUE CHICAGO 11, ILL.

THE CARTHAGE MACHINE COMPANY
CARTHAGE, NEW YORK
Manufacturer of
Machinery and Equipment for Mechanical and Chemical Pulp Mills and Special Machinery

Old Rags

White, No. 1—			
Repacked	*3.80	@	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Thirds and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.30	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

Pre-War Quotations

All Prices Nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.25	@	3.30
Wool Tares, light	3.25	"	3.50
Wool Tares, heavy	3.50	"	3.75
Bright Bagging	3.25	"	3.50
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	1.50	"	—

* OPA Maximum Prices.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—
(Hard Fiber)			
Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03½
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable Shredding	.01¾
Fancy Percales	.04¼
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean Bright—			
Sisal Strings	.04	"	—
No. 2 Clean Bright—			
Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	1.60	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South America	—	"	3.25

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	1.60	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South America	—	"	3.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.65
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

* OPA Maximum Prices.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¾	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¾
Underwear Cutters, Bleached	.06¼	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¾
New Black Silesias	.03	"	.03¾
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02½	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03½
New Canvas	.06¼	"	.06½
B. V. D. Cuttings	.06¼	"	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—*
Miscellaneous	3.20	"	—*
White No. 2—			
Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.85	"	—*
Quality B	1.80	"	—*
Quality C	.95	"	—*
Old Manila Rope	5.75	"	—*

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—

Price & Pierce Ltd.

WOOD PULP & PAPER AGENTS

for domestic and export

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POSIDRIVE WINDER SHAFT

Union's New Winder Shaft Has Many Features:

1. POSITIVE DRIVE
2. NO LOOSE WEDGES
3. NO CORE SPLITTING
4. LIGHTNESS
5. LOW COST

Tell us length of shaft and inside core diameter. A quotation will be made promptly.

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FITCHBURG, MASS.
(Associated with Union Screen Plate Company)

A TYPE AND SIZE FOR EVERY NEED IN MILL, FINISHING ROOM, CONVERTING PLANT

SAMUEL M. LANGSTON COMPANY, Camden, New Jersey

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MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

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The Trade-Mark of
LONG LIFE FELTS

The Waterbury Felt Co.

SKANEATELES FALLS, N. Y.

Paper and Paper Stock Imports At New York and Other Ports

NEW YORK IMPORTS

WEEK ENDING APRIL 27, 1946

SUMMARY

Newsprint	7,698 rolls
Printing Paper	3 cs., 2 rolls
Drawing Paper	3 cs.
Filter Paper	16 cs.
Surfact Coated Paper	5 cs.
Music Paper	15 cs.
Tracing Cloth	33 cs.
Gauze Carbonizing Tissue	34 cs.

NEWSPRINT

H. G. Craig Co., Donpaco, Montreal, P.Q., 385 rolls

H. G. Craig Co., G.D.D., Montreal, P.Q., 380 rolls.

H. G. Craig Co., Kermic, Montreal, P.Q., 388 rolls.

H. G. Craig Co., A.C.D., Montreal, P.Q., 391 rolls.

N. Y. Journal American, Markland, Liverpool, N.S., 1131 rolls.

N. Y. Tribune, Inc., Markland, Liverpool, N.S., 1834 rolls.

N. Y. World Telegram, Markland, Liverpool, N.S., 744 rolls.

Brooklyn Eagle, Inc., Markland, Liverpool, N.S., 595 rolls.

Herald Statesman, Inc., Markland, Liverpool, N.S., 41 rolls.

Washington Post, Markland, Liverpool, N.S., 1763 rolls.

Alexandria Gazette, Markland, Liverpool, N.S., 46 rolls.

PRINTING PAPER

Stevens Nelson Paper Corp., Port Melbourne, London, 3 cs.

Karr Ellis Co., Vretaholm, Gothenburg, 2 rolls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Port Melbourne, London, 3 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Port Melbourne, London, 16 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Jacob Luckenbach, Antwerp, 5 cs.

MUSIC PAPER

(———), Desirade, Havre, 15 cs.

TRACING CLOTH

Keuffel & Esser Co., Fred. E. Williamson, Liverpool, 33 cs.

GAUZE CARBONIZING TISSUE

G. F. Malcolm, Fred. E. Williamson, Liverpool, 34 cs.

RAGS, BAGGING, ETC.

Castle & Overton, Inc., Fernbrook, Alexandria, 74 bls. colored cotton rags; 78 bls. white cotton rags; 108 bls. waste hessian bagging.

E. J. Keller Co., Inc., Fernbrook, Alexandria, 200 bls. old cotton rags.

A. W. Fenton Co., Fernbrook, Alexandria, 73 bls. rags.

Philadelphia National Bank, Fernbrook, Alexandria, 120 bls. rags.

National City Bank, Port Melbourne, London, 81 bls. bagging.

Asher Kates, Tubul, Callao, 8 bls. rags.

Ledebaer & Co., Eros, Liverpool, 181 bls. cotton waste.

New England Waste Co., Empire Grange, Santos, 69 bls. cotton waste; 174 bls. cotton linters.

Simmons Co., Empire Grange, Santos, 1587 bls. cotton linters.

Massasoit Manufacturing Corp., Empire Grange, Santos, 45 bls. threadwaste.

(———), Stag Hound, Melbourne, 29 bls. flaxwaste; 34 bls. bagging.

E. S. & A. Bank, Armadale, Melbourne, 42 bls. wool waste rags; 4 bls. wool rags.

Commercial Bank, Aramadale, Melbourne, 13 bls. wool rags.

(———), Aramadale, Melbourne, 30 bls. wool rags.

D. M. Hicks, Inc., Exchester, Haifa, 72 bls. jute waste.

W. J. Green Co., Inc., Exchester, Alexandria, 151 bls. colored cotton rags.

Castle & Overton, Inc., Exchester, Alexandria, 332 bls. bagging.

A. W. Fenton Co., Exchester, Alexandria, 74 bls. rags.

(———), Exchester, Alexandria, 270 bls. rags.

A. W. Fenton Co., Egidia, Glasgow, 100 bls. rags.

(———), Egidia, Glasgow, 70 bls. old bagging.

Castle & Overton, Inc., Egidia, Glasgow, 600 bls. bagging.

J. Eisenberg, Cape Igvak, Liverpool, 21 bls. wool rags.

(———), Cape Igvak, Liverpool, 9 bls. rags; 150 bls. cotton waste.

C. Kutz, Cape San Antonio Fortaleza, 50 bls. cotton waste pickers.

Amtorg Trading Corp., Vilnus, Libava, 842 bls. cotton waste.

Castle & Overton, Inc., Jacob Luckenbach, Antwerp, 200 bls. dark cotton rags.

E. J. Keller Co., Inc., Jacob Luckenbach, Antwerp, 215 bls. rags; 281 bls. old rags; 423 bls. old dark cottons.

D. Benedetto, Inc., Jacob Luckenbach, Antwerp, 396 bls. old dark cotton rags.

H. S. Dorf Co., Cable Eye, Vera Cruz, 45 bls. woolen rags.

Swiss Banking Corp., Cable Eye, Vera Cruz, 63 bls. woolen rags.

S. Godfrey, Ltd., Cable Eye, Vera Cruz, 2 bls. woolen rags.

Ledebaer Co., Empire Camp, Liverpool, 181 bls. cotton waste.

CASEIN

Casein Co. of America, Ruben Dario, Buenos Aires, 2033 bags ground lactic casein, 224,000 lbs.

Sun Inter Co., Empire Grange, Buenos Aires, 500 bags casein.

GLUESTOCK, ETC.

H. Hollander, Golden Gate, Buenos Aires, 457 bags gluestock.

Trans-Atlantic Animal By-Products Corp., Empire Grange, Buenos Aires, 128 bags gluestock.

Polish Trading Co., Empire Grange, Santos, 200 bags sheet bone glue.

Trans-Atlantic Animal By-Products Corp., Empire Grange, Santos, 1000 bags ground bone glue.

Trans-Atlantic Animal By-Products Corp., Cape Pembroke Fortaleza, 225 bags sheet bone glue.

Irving Trust Co., Cape Igvak, Liverpool, 180 bags hidecuttings.

Karr Ellis Co., Empire Camp, Liverpool, 392 bags hidecuttings.

WOODPULP

Price & Pierce, Ltd., Vretaholm, Gothenburg, 1500 bls. dry strong sulphite, 315 tons.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 27, 1946

Price & Pierce, Ltd., Vretaholm, Gothenburg, 750 bls. dry strong sulphite pulp, 987 tons.

BOSTON IMPORTS

WEEK ENDING APRIL 27, 1946

1st National Bank of Boston, Empire Grange, Montevideo, 37 bls. gluestock.

Empire Staters to Convene At Thousand Islands Club

ALEXANDRIA BAY, N. Y.—Empire State "TAPPI" has arranged to hold its Spring Meeting at the Thousand Islands Club on June 13, 14 and 15, 1946. The Club, operated by Canada Steamship Company, is located on Wellesley Island and is accessible by both boat and car. It is one of the most beautiful hotels in the country and together with its location and outstanding facilities, should make for a profitable and enjoyable meeting. Registration will open on Thursday afternoon, June 13, and will close with luncheon at noon Saturday, June 15.

An interesting program of mill visits and technical papers is being arranged. Golf, swimming, bridge, boat trips, sightseeing and other resort activities will be arranged for both men and women guests.

The facilities of the Club are limited to one hundred persons but arrangements have been made to take care of another one hundred persons in hotels at Alexandria Bay, only a few minutes away by boat service. The Committee has decided to make hotel assignments on the basis of "first come, first served" principal.